American Aviation

25c | *The News Magazine of Air Transportation* | August 15, 1947

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Breathing Spell Needed

*(This issue, while I am away from the U. S. observing foreign air operations and services first hand, the editorial column is turned over to Mr. Per A. Norlin, president of the Scandinavian Airlines System, who is one of the top dynamic young leaders of world air transportation.—*WAYNE W. PARRISH*)*

Stockholm, Sweden.

AVIATION TODAY is confronted with many problems, and we are in the habit of interpreting the day's temperature from conditions in America. Seen from this side of the Atlantic, it seems to us that a wave of pessimism about the future of aviation has spread over America, and we can feel certain effects from it. It is quite natural that we cannot, today, as before the war, without greater contributions of capital and personnel within the framework of the daily flying activity, build up our organization to such an extent that it can take on all the new larger equipment which will be placed in service in 1947-48. Those who have thought that all this new flight equipment could be put into traffic without great costs are going to be disappointed. The considerable capital which must be invested cannot immediately yield interest, but the shareholders will profit after the new equipment has been proven.

The unfortunate accidents of the past winter have received much unwarranted publicity. On the other hand, less publicity has been given to the fact that during the past year safety in air travel has been greater than ever before. It is perhaps not strange, therefore that many have interpreted the quite natural seasonal reduction in air travel during the year's winter months as the traveling public's reaction to insecurity of air travel. It cannot be denied that many accidents could be traced to shortcomings of the companies concerned, but this should not be taken as a sign of public distrust in air travel. Within all reliable airlines more strenuous efforts are being made to train properly all personnel and to ensure greater safety. Within Scandinavian Airlines System the present year's flight training for personnel will amount to about $2,000,000. A good barometer for safety in regular air travel can be found in flight accident premiums for passengers and premiums for "hull risk." It is clear to those who have had an opportunity to follow the deve

(Turn to page 8)

Enters 20th Year With Delta

L. B. Judd, comptroller and director of Delta Air Lines just entering his 20th year with the company, is one of the earliest finance men in the aviation industry. He is presently serving as first vice president of the Air Transport Association's Air Finance and Accounting Conference.

In This Issue

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CIRCULATION COPY 2

NEW! all-purpose STRONA aviation greases withstand heat, water, cold!

1. STRONA HT-1 and LT-1—the new *all-purpose* strontium base aviation greases—give complete protection at temperatures from 300°F. to −40°F.! That means maximum lubricant protection for aircraft parts in any kind of weather from the arctic to the tropics!

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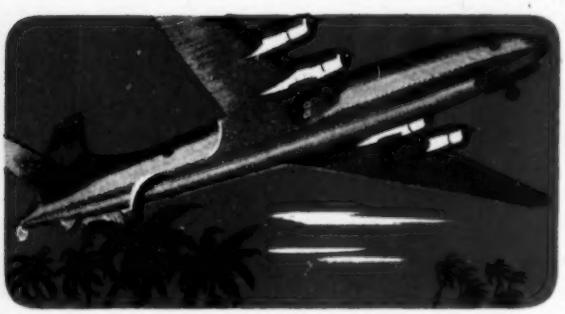

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Martin Memo

Published by The Glenn L. Martin Company

Baltimore 3, Maryland

Toughest Test Yet . . . After having flown a distance greater than three times around the world during early flights and on CAA tests, the new Martin 2-0-2 was subjected to a grueling accelerated service test. First of its kind, the test consisted of a series of flights carried out under actual airline operating conditions. It covered a nation-wide network of more than 18,000 miles and included landings at more than 50 different airports. By meeting the varying extremes of altitude, weather and airport facilities encountered, the 2-0-2 offered further proof that it is America's top twin-engine airliner.

Pilot's Third Arm . . . The revolutionary new automatic propeller feathering system, developed for use on the Martin 2-0-2 and 3-0-3, permits, for the first time, full take-off weights and maximum operating economy on a twin-engine airliner. Thoroughly tested, this latest Martin development assures top performance during complete or partial engine failure on take-off. The system, in effect, feathers the propeller when the windmilling drag exceeds the thrust and at the same time cuts off the fuel booster pump. Pilots can easily over-ride the automatic system if they desire. Operators will benefit directly, as the use of the automatic feathering system allows greater take-off payloads.

Keep Our Air Arm Strong . . . The American Legion's intensive Air Power educational program is bringing to the American people the knowledge that Air Power is Peace Power and that without air power there can be no security for the nation. In a statement to members of the American Legion, Paul H. Griffith, National Commander, stated in part, "The destiny of the United States and the world today rests on air power. America must be kept first in the air." To keep America first we must continue our advanced aviation research and maintain an aircraft industry capable of rapid expansion in an emergency.

Look What's Up . . . The new Martin XB-48, latest pride of the Army Air Forces, gets a powerful push from its six jet engines . . . zips along at extremely high speeds . . . is the largest conventional multi-jet plane yet constructed . . . pioneers a new bicycle-type landing gear developed by Martin for our AAF. After its first flight on June 22, the XB-48 made its next three flights during the following week. An exceptional record for most newly designed planes, but not for a Martin plane. For example—the Martin 2-0-2, which made its second flight 15 hours after its first, had a record of nearly 100% availability during the rigorous testing period.

Zip, and They're Up . . . Thousand one, thousand two, thousand three, thousand four . . . it takes four seconds to read that aloud and that's all the time it takes for the landing gear of the Martin 2-0-2 to retract. Exact figure is 3.9 seconds. This quick reduction of drag at take-off is an added safety factor, and enables the 2-0-2 to reach its high cruising speed faster.

Faster, Express-Speed Schedules . . . on short-haul runs are possible with the Martin 2-0-2. This speedy airliner cruises 100 m.p.h. faster than the planes it supplants. This extra speed enables operators to cut schedule time by ⅓—build passenger acceptance—get more trips between inspections. In short, the new 2-0-2 cuts costs, builds profits for airlines.

Slip 'Em In . . . No tear-down is necessary to inspect or replace the Martin 2-0-2's Mareng fuel cells. Easily installed or removed through especially designed hatches (above), these flexible cells provide safe, dependable storage for the 1030 gallons of gasoline carried by the 2-0-2. And being flexible, the two tanks (each consisting of four inter-connecting Mareng cells) are less likely to rupture when subjected to continuous vibration or excessive stresses and strains. Intricate corner assemblies, excessive riveting and troublesome metalwork are eliminated.

New Wings for the World's Airways . . . Modern Martin 2-0-2 luxury liners offer new standards in speed, comfort and dependability . . . carry 36 to 40 passengers at speeds 100 m.p.h. faster than the planes they supplant. Air travelers and shippers will gain more time than ever before when they fly and ship in Martin transports on leading airlines. First deliveries on the new Martin 2-0-2 are to Northwest Airlines, with deliveries to follow to other North and South American airlines.

Martin
AIRCRAFT
Builders of Dependable Aircraft Since 1909

—FORTNIGHTLY REVIEW—

* * * *

Through better utilization of weight capacity of their planes, airlines can turn operating losses into profits. New emphasis is on tonnage load factor, rather than just passenger load factor. (Page 13)

New pattern of air service shapes up through flood of non-stops granted carriers in recent months—no less than 475 authorized by CAB in past year and a half. (Page 15)

U. S. airlines, including domestic, international, and feeders, by end of July had inaugurated service over 91% of their total certificated route mileage. (Page 17)

The British government is spending $1,000,000 to find out if refueling its transport planes in mid-air is technically and economically feasible. (Page 18)

CAA has given a verbal brush-off to the proposal of the Hinshaw subcommittee in Congress that it scrap its ILS and omni-directional range program in favor of radar aids. (Page 31)

Nearly a million air passengers entered the U. S. by plane during the year ended last June 30 for a new all-time high. (Page 44)

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Price of Convair Liner Boosted

Price of the twin-engined pressurized Convair Liner transport plane has been increased from $315,000 to $360,000, effective Sept. 1. W. A. Blees, vice president-sales for Consolidated Vultee Aircraft Corp., said increased material and labor costs, plus effects of a shrink-ink market abroad due to a dollar shortage, made the increase necessary.

Favorable Cargo Legislation Okayed

Legislation which will permit scheduled air carriers and truckers to engage in a through air cargo service without the necessity of publishing joint tariffs went into effect Aug. 4 when President Truman signed H. R. 2109. The bill amended the Civil Aeronautics Act. Airline officials believe this will be a boon to the air freight business, enabling many communities not now directly served by air carriers to receive the benefit of the faster air freight service through the combined air-line-truck operation.

Hughes Accuses, Brewster Denies

Howard Hughes, aircraft builder, movie producer and principal stockholder in TWA, on Aug. 6 testified, under oath before the Senate War Investigating Committee, that Sen. Owen Brewster (R., Me.), chairman of the committee, had offered to call off the investigation of Hughes' $40,000,000 war contracts, involving his flying boat and XF-11 photographic planes, if Hughes would agree to a merger of TWA with Pan American Airways. Hughes said the offer was made at a luncheon which Brewster gave him in the Mayflower Hotel in Washington. Brewster followed Hughes on the stand, denied he had made the offer. He did admit that the man whose war contracts he was investigating had been his guest at a luncheon at the Mayflower.

Ass't Sec'y of Commerce for Aeronautics

John R. Alison, of Gainesville, Ga., has been appointed on an interim basis to become Assistant Secretary of Commerce for Aeronautics, a new title created under recently enacted legislation providing two new assistant secretaries of commerce. Alison is a former AAF fighter group commander, a former advisor to the Royal Air Force on operation and maintenance of American planes, former U. S. air attache to the Soviet government, and former lend-lease coordinator in the Persian Gulf area.

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AMERICAN AVIATION

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WAYNE W. PARRISH

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US

FORTNIGHTLY REVIEW

(Continued from page 4)

$104 Million for Air Mail

Supplemental appropriations for domestic and foreign air mail requested for fiscal 1948 by the Post Office would raise the total air mail funds to more than $104 million. PO, which received $37,000,000 for domestic air mail in the 1948 appropriation bill, will need $14,295,000 more, Robert Burgess, Deputy Second Assistant Postmaster General, told Congress. Of the total fund, $29,000,000 would go to trunk lines, $21,000,000 to smaller carriers and feeders. Burgess asked an increase in foreign air mail funds of $47,500,000 for fiscal '48. Congress had appropriated only $5,500,000, a token fund, due to fact that at time of original hearings some foreign rates had not yet been set by CAB.

Congressional Air Policy Board Created

The temporary Congressional Air Policy Board, created by act of Congress during the closing week of the session, does not expect to start its study of the needs of the aviation industry until after Labor Day. It was expected that Sen. Albert W. Hawkes (R., N. J.) would be named chairman and Rep. Carl Hinshaw (R., Calif.) vice chairman. Much of the actual direction of the inquiry, however, will be left to Rep. Hinshaw, because of his engineering background and intimate knowledge of the aircraft manufacturing and airline industry.

Other members of the 10-man Congressional board are: Senators Owen Brewster (R., Me.), Homer E. Capehart (R., Ind.), Edwin C. Johnson (D., Colo.), Ernest W. McFarland (D., Ariz.); Representatives Charles A. Wolverton (R., N. J.), Karl Stefan (R., Neb.), Alfred Bulwinkle (D., N. C.), and Paul J. Kilday (D., Tex.)

Unlike the President's Air Policy Commission which has exceedingly broad powers to go into all phases of the needs of civil and military aviation, the Congressional inquiry is to be limited primarily to a study of the requirements for maintaining a virile aircraft manufacturing industry. Specific prohibitions against further exploration of the Chosen Instrument policy in international air transportation, while not in the Act itself, were agreed to in Senate and House debate on the measure.

Small Transport to Sell Under $15,000

The Brigadier 250, five-place executive transport which was first test-flown in June, will sell for not more than $15,000, according to Bauman Aircraft Co., Van Nuys, Calif., the manufacturers. Company expects CAA licensing in late fall or winter, with production of the twin-engine pusher-type craft to start next year. The plane is all-metal, powered by two Continental C-125 six-cylinder horizontally opposed engines of 125-hp each. Empty weight is 1,980 lbs., normal gross weight 3,200 lbs.

Notes in the News:

Total life of all types of AAF aircraft will average 10-11 years under present plans and budgetary restrictions. Budget allows for 9,000 planes, and AAF plans ultimately to replace this inventory every 4½ years to remain ahead of other nations . . . CAA proposes to establish approximately **250 major seaplane bases** in the U. S., with one planned for cross-country seaplane pilots approximately every 125 miles. Total cost is estimated at $2,500,000 . . . Air Transport Command planes will **reopen the Great Circle route** between the U. S. and Tokyo by way of Alaska next month. Primary objective is to train crews for cold weather and instrument flying . . . **Luscombe Airplane Corp.** has entered the four-place plane market with a new all-metal utility plane scheduled for nationwide demonstration early this fall. Price has not been disclosed . . . **Goodyear Aircraft Corp.** has received first approved type certificate from CAA for a caster landing gear.

International

Cuban ATA, Arinc Formed

Eleven of the 12 airlines operating in or to Cuba have formed Cuban counterparts of the Air Transport Association of America and Aeronautical Radio, Inc. The new agencies are Asociacion de Transportadores de Cuba and Radio Aeronautica de Cuba, S. A., respectively. The one company to remain aloof from both organizations is Aerovias "Q", S. A., the only 100% Cuban-owned airline.

SABENA Purchases 6 Convairs

SABENA Belgian national airline, has contracted for purchase of six Convair (240) Liners at cost of approximately $2,000,000, with deliveries scheduled to begin next February. SABENA will use the planes throughout its European system. The order brings to 171 the total of Convair Liners on order by 10 commercial airlines.

BEA Experiments with Helicopters

British European Airways Corp. has set up an Experimental Helicopter Unit with Wing Commander R. A. C. Brie in charge. Trial mail flights will be made with the first of three Westland-Sikorsky S-51 helicopters, which will be delivered in September. Two Bell models are also on order.

76 Vickers Vikings Purchased Abroad

As of July 1 a total of 76 Vickers Viking twin-engined transports had been purchased by air services outside Great Britain, according to a London report.

TCA to Test Radar Instruments

Trans-Canada Air Lines plans to install a radar altimeter and a radar collision warning indicator in one of its DC-4M "North Star" transports for operational testing.

External Operations OK'd for Italian Line

The combined Allied Chiefs of Staff have authorized operations of Italian commercial airlines to points outside Italy for the first time since the war. First such flight was scheduled recently between Rome and Castel Benito, Tripoli, by Aerolinee Italiane Internazionale (Alitalia), the joint Italian-British company. The firm plans to start services to Tunis, Cairo, Paris and other European cities, according to a Rome report.

National Opposes LAV Permit Renewal

National Airlines opposed renewal of the foreign air carrier permit of the Venezuelan Government airline Linea Aeropostal Venezolana (LAV) at a recent Civil Aeronautics Board hearing. The permit was originally based on the International Air Transport (Five Freedoms) Agreement and expired when U. S. withdrawal from the pact became effective July 25. Pending action by the Board, LAV will continue operations on the basis of Sec. 9 (a) of the Administrative Procedures Act which extends a permit beyond its expiration date provided an application for renewal is pending before the agency which granted the permit.

Siam, China Sign Transport Agreement

Siam and China have signed an air transport agreement, ending a two months feud whereby the two nations had barred each others' aircraft from commercial landings. Pacific Overseas Airlines Siam may now stop at Shanghai on its trans-Pacific service to the U. S. Rights for traffic stops at Bangkok will be exercised by the two Chinese airlines, China National Aviation Corp. and Central Air Transport Corp.

The Birdmen's Perch

By *Major Al Williams,* ALIAS, "TATTERED WING TIPS,"
Gulf Aviation Products Manager, Gulf Bldg., Pittsburgh 30, Pa.

Know what the average airline pilot is like?

Always first with the latest, The Perch rushes results of a brand-new CAA study of airline pilots and co-pilots to you:

The average airline pilot:

is 32 years old . . .

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wears glasses 2.7% of the time!

And according to Flutter, when the average airline pilot owns his own putt-putt, he almost invariably oils and fuels it with Gulf Aviation Products!

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This Alchlor Process is an additional refining step that we use *after* the usual refining procedure.

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And there is more lubrication-per-can in Gulfpride than any oil we know.

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So each of them is now entitled to be addressed as "Your Majesty" by non-Perch Pilots.

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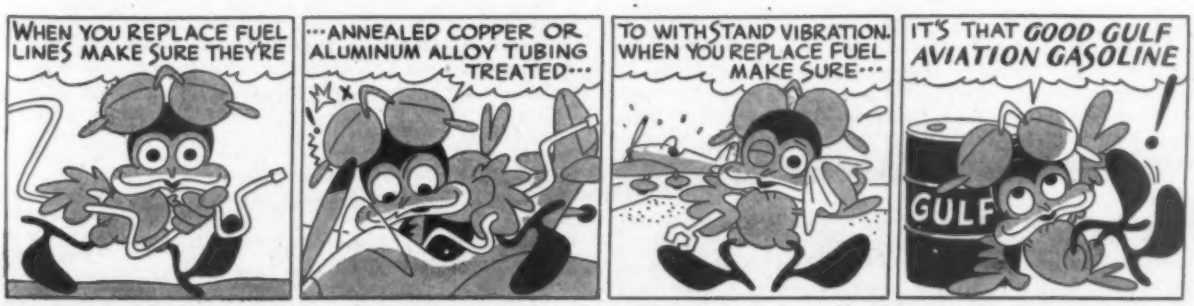
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IT'S THAT GOOD GULF AVIATION GASOLINE
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Editorial

(Continued from page 1)

of these premiums that the insurance market reacts in a positive way to the contributions made today to increase safety, and in many cases reductions can be reported.

During recent years, optimistic statements have been made about reductions in airline rates. It is clear that the rates must be reduced in order that aviation may obtain a wider circle of travelers and an increased quantity of freight. These reductions, however, cannot happen overnight, but require considerable time and different flight equipment than what we have today. There is no doubt that those who predict low transportation rates will eventually be correct. Today's rates are too low, however, to cover the expenses of the airlines. It is necessary to put a stop to rate reductions and to return to somewhat higher fares.

Aviation is in dire need of one or two years' breathing spell in order to train its personnel and modify its organization, so that it will be in a position to handle the masses of air traffic which, without doubt, will be an eventuality. If this mass air travel came now, the airlines could not properly handle it. Today, in European air routes we have airports where customs problems and office conditions offer no possibilities of having cargo, which perhaps came from North or South America in one day and night, delivered to customers before several days have elapsed. Doubling of the schedules would create passenger confusion, and much time would be lost at the terminal where hundreds of dissatisfied passengers would have to stand in line and wait for processing.

Efforts have been started to simplify customs and passport examinations and to do away with the demand for forms so prevalent today, which delays the time gained by air travel. It is not easy to do away with old ideas and procedures within the customs and passport offices. Today, for example, 1,040 forms are necessary for each departure of an SAS plane from Scandinavia to Buenos Aires. (In some companies, on certain routes, the documentation amounts to as many forms as the fantastic total of five to eight thousand!) Aviation has had a tendency to try and solve its traffic problems alone and not to take advantage of the many years of experience of the other forms of transport in handling mass transport. They, on the other hand, have not hesitated to make use of the experiences and good proposals which have been forthcoming from aviation.

Mail has naturally been a vital factor in airline incomes and will continue to play a big role, even though the main income is derived from passenger traffic and freight. In prewar Europe, all first class mail was carried by plane even without air mail postage, and now several countries in Europe have reintroduced the same system. This summer between 80 and 90 round trips a week will be made over the North Atlantic—*i.e.*, about every other hour a plane will make a scheduled flight in each direction between Europe and America. It seems absurd that the sender, in order to insure prompt mail delivery, should have to mark letters specially and pay higher postage. Boats are still the accepted means of ocean transport, although they take from 4 to 8 days and nights across the Atlantic, whereas flying now takes about 10 hours.

A general tendency towards considerably increased airport costs has become apparent. In certain instances, an extra tax has been proposed which would be added to the present gasoline prices delivered to the airlines at the airport. This extra tax would be used to defer the expenses of the airports and naturally the airlines are justifiably opposed to any such tax. Airports have been constructed to remain in existence for many years and their cost should not be paid by additional taxes, but rather through investments which should yield interest over a period of time. The airlines are certainly willing to pay for more efficient service, but such increases should not be out of proportion. Expenses of airports should be covered by increased traffic rather than through prohibitive charges against the operators which in time would cause an economic crisis.

A vital question of international aviation is that concerning the right of the airlines to engage in international air traffic. During the past years various proposals for multilateral air agreements have been discussed. In the last proposal now under consideration, there is much detailed discussion regarding the privileges which the countries would apportion among the airlines according to set rules and "sound operational practice," etc., concepts which are very vague and implications which the authors themselves do not seem to realize. One searches in vain for the word "public interest" to be mentioned in the proposal.

In the northern countries we have always cooperated for the greatest possible freedom for air travel. There can be no doubt that such a goal is the only right one.

The uncertainty which today surrounds the freedom of the air is, to a certain degree, the fault of the airlines. It has occurred that when airlines encounter stiff competition, they attempt to have their respective governments set up certain restrictions to hamper competitors. It is, however, a dangerous road to tread, and if the airlines themselves could see what was best for them, it would be easier to get the respective governments to agree on the best regulations for international air travel for all concerned.

A great step forward to international cooperation between airlines has been made in the re-establishment of the International Air Transport Association which, under the skilled leadership of Sir William Hildred, is now making valuable contributions in the rebuilding of world air travel. IATA has its main office in Montreal, and works in close contact with ICAO. Aviation is developing very quickly, and the men who meet within IATA's different committees to discuss the problems at large are all men who deal with aviation daily and who thus have full knowledge of the measures needed and desired. IATA's strength lies in the fact that these committees are not made up of IATA's permanent employes, but of the airlines' own employes who, in their daily work, are devoting their time to obtaining improvements by close cooperation. It has been gratifying to see how these committees have been able to work together with ICAO, and it is to be hoped that the cooperation between ICAO and IATA will be further developed to the benefit of the airlines and the airminded traveling public.

There is no reason to regard the development of aviation pessimistically. Quite the contrary. It is necessary to make it clear that aviation, which perhaps is developing more quickly and is confronted by greater problems than any other industry today, needs greater capital to strengthen its structure and time to prepare itself for its commitments. Aviation has become a gigantic industry which follows the same laws as any other business and which has to be controlled accordingly.

European aviation is deeply grateful to its counterpart in the United States, and the close cooperation between European and American airlines, which gives good promise for the future.

Per A. Norlin.

How rubber can stretch an airplane

THE AIRLINES have maintained schedules with De-Icer protection for fifteen years. Business men can "stretch" the utility of their own planes the same way.

For B. F. Goodrich engineers have worked with the manufacturers of practically every plane of twin-engine size and larger to develop custom-built De-Icers for each model. The manufacturers now build De-Icer plumbing right into all these planes. Today, De-Icers specially made for each of these planes are as easy to order as a new airplane tire.

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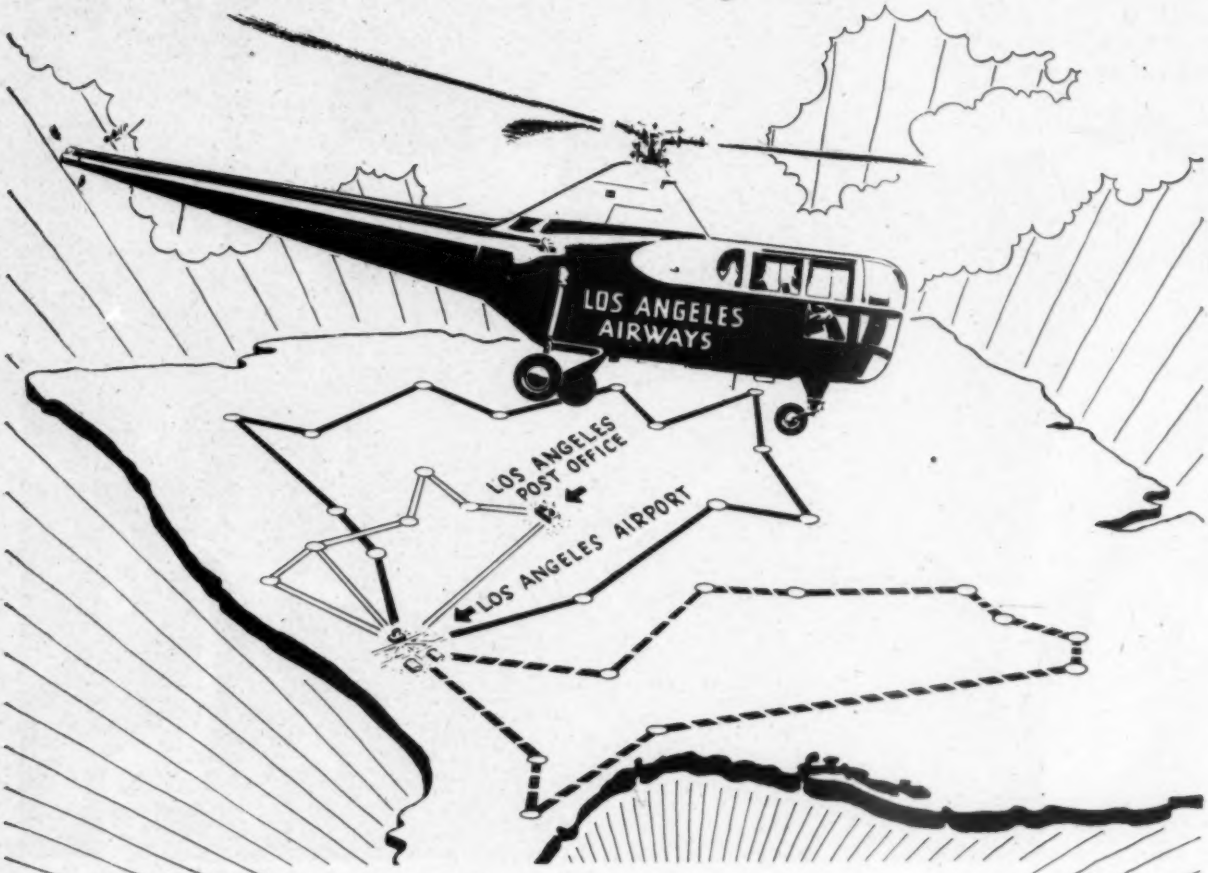
Air Mail By HELICOPTER
Another Sikorsky First



Transportation and communication take another step forward with the award to Los Angeles Airways of the first helicopter air mail routes in history.

Operating between the Los Angeles airport and thirty post offices in nearby communities, these new routes will save as much as 24 hours in air mail delivery time.

Sikorsky S-51 helicopters will be used by Los Angeles Airways in bringing this faster service for air mail and goods to the Los Angeles area.

SIKORSKY AIRCRAFT

BRIDGEPORT, CONNECTICUT

ONE OF THE FOUR DIVISIONS OF UNITED AIRCRAFT CORPORATION

Background and Trends

(Significant Developments and Forecasts Based on the Fortnight's Top News)

Shake-up: As many as 400 Capital Airlines employes, including some top echelon officials, may be affected by shake-ups in prospect under Raymond C. Lochiel, recently named v.p.-comptroller with "complete supervision of all corporation expenditures." Cuts are being planned where he believes they will do most toward putting the airline on a sound operating basis.

Campaign: *TWA has launched intensive sales solicitation drive to offset recent unseasonable drop in passenger traffic throughout transcontinental division. Campaign is pointed at 20 top revenue producing districts which account for about 90% of TWA's total domestic income. TWA has also noted serious increase in no-shows on domestic flights and is taking steps to remedy matter.*

Upward: Average monthly volume of international air mail during first six months of 1947 represented 75% increase over last October. Rates were reduced substantially last November.

DC-9: *Douglas has indicated it could deliver DC-9's, whose specifications are now undergoing study by airline officials, by mid-1949. The transport is said to be part DC-3, DC-4, and DC-6, and not an entirely new design.*

Pack-Plane: Fairchild Aircraft has developed designs for a pack-plane or detachable fuselage aircraft similar in configuration to Fairchild's C-82 Packet. In each of the designs under consideration, plane or flight unit can fly without the pack or fuselage, and study has been given to dropping the pack in flight either by parachute or at low altitude, skidding it off on a field. AAF has expressed interest, but taken no action.

Awkward: *Some members of House Interstate and Foreign Commerce Committee feel Chairman Charles Wolverton blundered committee into awkward position recently by asking CAB for free transportation on U. S. international airlines in connection with planned trips to Europe, Asia, and South America. Wolverton, they say, could have obtained CAB attitude on an informal basis, avoiding the formal turndown received. Three years ago Wolverton fought the idea of free transportation for members of Congress when amendments to the Civil Aeronautics Act were being considered.*

Progress: Twenty-eight states now have complete aviation education programs underway, and 12 are working on such programs with aid of CAA aviation education consultants. Several states have included actual flight experience, e.g. California, where last school year 5,451 hours were recorded for 1,594 high school students and teachers.

Leviathan: *Design for a huge flying boat weighing 250 tons—50 tons more than Howard Hughes' much-publicized Hercules—is gathering dust in engineering offices of the Glenn L. Martin Co., which can't afford to build the ship itself and hasn't been able to interest either Army or Navy in being its "angel."*

Plane Exports: June exports of 174 personal aircraft reported by 11 companies to Aircraft Industries Association brought total for first six months to 988, well below optimistic industry estimate several months ago that year's total may approximate 5,000. The June figure was 15% of total production. Some 1,380 were exported during all of 1946.

Radar Battle: *Effect of the refusal of T. P. Wright, CAA administrator, to go along with House Commerce committee recommendations for greater use of radar techniques in air navigation and landing operations may be countered by a report from the Air Coordinating Committee which, it is understood, will recommend radar over ILS. Wright's stand also may result in some new legislative curbs being applied to CAA.*

Slacking Off: Working force at Lockheed is being reduced by about 100 employes weekly, after declining from 15,000 to 14,432 during June. Current total of 14,000 is expected to drop to 12,500 by year-end. Completion of fabrication of parts for Constellations now on order (35) was given as reason. Lockheed has delivered 87 Connies.

Big Eating: *Domestic airlines are expected to serve 3,000,000 more meals in flight this year than in 1946. According to present estimates, this increase of nearly 20% means 15,052,500 meals will be served, with 565,000 gallons of coffee.*

Food Saving: Look for Eastern Air Lines to cut out hot breakfasts and return to fruit juice, buns and coffee. Saving will be $7,000 monthly.

Top City: *United Air Lines, which inaugurated transcontinental service into Los Angeles last month, expects the southern California city to become the line's greatest revenue producing point. San Francisco has been UAL's No. 1 point in revenue, producing more than $1,000,000 worth of tickets a month.*

Special Deal: Some Congressmen are wondering why the State Dept. and the CAB gave special treatment to Peruvian International Airways in departing from the standard clause in U. S. bilateral agreements regarding "substantial ownership and effective control" of an airline being in the hands of "the other contracting party" —in this case, Peru. Controversy on this basic policy matter has not necessarily been ended by the granting of a foreign air carrier permit to the Peruvian-registered company.

Waiting: *A number of British private aviation enterprises are keeping themselves "in being" for the day when Parliament will reverse its policy of government monopoly of scheduled air transport, according to several reports. Company officials have stated that, if the financial and operating records of the government corporations do not improve, some return to private enterprise is inevitable. Meanwhile, they are "waiting out" the nationalization period, which they admit may last several more years.*

Safety Project: CAA-sponsored project to develop psychological and aptitude tests for transport pilots is nearing completion under direction of Dr. John C. Flanagan at University of Pittsburgh. Preliminary work has covered interviews with airline pilots, company check pilots and CAA air carrier inspectors, and check of CAA records of examinations for airline pilot ratings, company records of pilots, and CAB accident reports.

R. R. Accidents: *For the twelve months ending June 30, 1945, there were 14,080 railroad accidents. For the year ending June 30, 1946, there were 12,809. For the nine months following July 1, 1946, there were 9,500.*

LIGHT!

You're looking down the length of the upper cargo section of the Boeing Strato-freighter, the new YC-97 Army Cargo plane—one of the newest aircraft to be equipped with G-E fluorescent lamp ballasts. Ever since General Electric started supplying this equipment for aircraft, our specially designed ballasts have been used on all types of planes. These ballasts are designed for altitudes up to 50,000 feet, temperatures from minus 70 C to 71 C and are capable of withstanding severe shock and vibration.

Like all other General Electric aircraft equipment, these ballasts are lightweight, and have been carefully tested at our own flight test laboratory. G-E precision-built products for aircraft range from tiny switchettes and relays to generators, motors, and jet engines. Completely engineered systems automatically do many jobs that ordinarily require much time and attention from pilot, engineer, and other crew members. Our specialists will gladly work with you to help you determine the right electric equipment for your job. Just call the nearest G-E office. *Aviation Divisions, Apparatus Dept., General Electric Company, Schenectady 5, N. Y.*

PRECISION PRODUCTS AND ENGINEERED SYSTEMS FOR AIRCRAFT

GENERAL ELECTRIC

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Cargo Space Key to Airline Profits

Better Utilization of Weight Capacity Can Turn Losses into Earnings; Tonnage Load Factors Down

By CLINTON R. HARROWER

A little crystal gazing into what could happen to operating revenues of the domestic airlines if and when a major upturn takes place in the utilization of aircraft space and facilities provides food for sober financial thought.

Thus far this year, operating revenues have maintained a healthy margin over the corresponding figures for a year ago. If the present rate is maintained, operating revenues for 1947 will be the highest on record.

That steady revenue growth, of course, is caused primarily by a continued growth in traffic. Despite the difficulties early this year, complete returns now show that revenue passenger miles flown in the first four months of 1947 gained more than 16% over the same period of 1946. Total revenue ton miles flown, which is a better guide to revenue traffic because it includes passengers, mail, express and freight, gained more than 18%.

In the meantime, however, the airlines have been adding steadily to their fleets. Simultaneously route mileage has been going up. The result was an increase of slightly more than 50% in available seat miles flown and of almost 60% in available ton miles flown.

The following table illustrates how the gain in traffic, even though it is setting new records, has not matched the increase in available facilities. Figures are for the first four months.

	1947	1946	Increase
Revenue Passenger Miles	1,773,233,000	1,531,785,000	16.3%
Available Seat Miles	2,707,321,000	1,802,891,000	50.1%
Total Ton Miles Flown	204,304,286	172,171,000	18.6%
Available Ton Miles Flown	366,609,253	229,773,000	58.6%

The passenger load factor thus dropped from 84.9% to 65.5%. On the other hand, the rate at which the total load carrying capacity of the airplanes was being used declined even further. The tonnage load factor went down from 74.9% to 55.7%.

In other words, the airplanes on the country's airway system last year were carrying almost 75% of the total deadweight of revenue traffic of which they were physically capable (passengers, mail, express, freight). This year they did little more than one-half.

But because there were more airplanes flying more miles with more traffic than ever before, operating revenues increased to $100,691,873 in the first four months of 1947 from $82,901,281 in the corresponding period of 1946, indicating an average revenue of 49.2c per ton mile flown (for all types of traffic in the aggregate) against 48.1c last year.

It is interesting to speculate as to what could have happened to revenues had the greater number of airplanes in service this year been working as hard as did the smaller number last year.

Assuming that the tonnage load factor was held unchanged from last year at 74.9%, the 366,609,253 available ton miles flown in the first four months of 1947 would have been converted into 274,550,330 revenue ton miles, instead of the 204,304,286 actually reported. On the basis of current revenues per ton mile, operating revenues would have been $134,278,672, or one third greater than actually experienced. The potential increase was almost double the net operating deficit incurred by the airline system in that period.

Recent developments in the air freight field have placed new emphasis upon the tonnage load factor rather than on the passenger load factor as a guide to the extent to which revenue producing capacity of the aircraft is being utilized. Month after month, a spread occurs between those two figures. In April, for example, the tonnage load factor for the airline industry as a whole was 11.6 percentage points under the passenger load factor. Thus the revenue producing capacity of the aircraft is being exploited even less than would be indicated by the conventional load factors.

Another "if" figure will illustrate the effect upon revenues to be expected by closing that gap, or by lifting the tonnage load factor. If the TLF (tonnage load factor) for the first four months of this year had been equal to the PLF (passenger load factor), an operating revenue figure of $118,129,000 would have been indicated, on the basis of the 49.2c average revenue per ton mile for all forms of traffic.

The difference between that and the actual results almost equalled the operating deficit of the airlines for that period. The great gains being made in air freight, consequently, are becoming increasingly important revenue-wise because every extra pound of cargo which can be developed to fill the unused weight space tends to lift the TLF.

The table on Page 14 indicates how the TLF has generally lagged behind the PLF.

A study of the relationship between the growth of route mileage and the revenue passenger miles over the past few years is equally revealing.

By the end of 1941, the nation's airline system had grown to 41,915 route miles. Then the war suspended further growth and at the end of 1944 the total system comprised only 40,392, miles. The war, however, brought a tremendous expansion in passenger traffic. Revenue passenger miles jumped from 1,369,584,231 in 1941 to 2,229,571,113 in 1944.

Intense Utilization

That meant that 1944 brought the most intensive utilization of the airline system in history. In 1941, each of the 41,915 route miles carried 32,675 revenue passenger miles. This meant that the number of revenue passenger miles flown over each route mile was equal to 77.9% of the total airline system. The decline in route mileage and increase in passenger traffic in 1944, however, yielded 55,198 passenger miles per route mile. The average passenger traffic over each route mile was equal to 136.5% of the total system, the highest on record.

Since then, route mileage jumped to 95,921 at the end of 1946 and revenue passenger miles to 5,947,046,724, making 61,996 passenger miles per route miles. Although all these figures were new high records, the rate at which the system was being used fell away sharply. The number of revenue passenger miles flown per route mile dropped to 64.6% of the total system mileage, the lowest since 1940.

There were a number of reasons for the lower utilization rate, chief of which can be mentioned lower load factors resulting from increasing

number of seat miles available as new and larger equipment went into operation and the fact that full traffic potential on the newly opened routes had not yet been exploited.

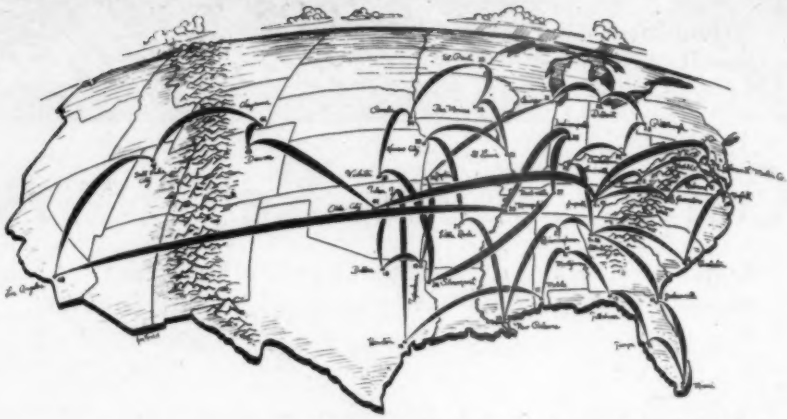
Capacity Outgrows Traffic

Point is, however, that IF the country's domestic airlines had been able to utilize the 1946 route mileage as intensely as in 1944, the 5,947,046,-724 revenue passenger miles would have jumped to something in the neighborhood of 12,500,000,000 and passenger revenues to something like $575,000,000 from the $275,569,723 actually reported.

The word "IF", of course, plays a large part in any speculation. From the evidence, however, it is clear that the physical ability of the airlines to handle increasing traffic is growing faster than the traffic itself, even though the latter, in the form of ton miles flown and operating revenues, is steadily going into new high levels.

Tonnage Load Factors Below Passenger Factors

		1947 Jan.	Feb.	Mar.	Apr.
American	PLF	63.1	58.9	70.3	77.6
	TLF	53.6	53.9	62.6	68.4
Braniff	PLF	60.7	56.4	62.4	62.8
	TLF	66.3	57.9	63.8	62.8
Caribbean	PLF	35.9	41.7	45.6	47.7
	TLF	33.6	36.2	40.7	42.6
C & S	PLF	51.7	53.7	60.6	65.7
	TLF	47.9	47.9	53.7	57.1
Colonial	PLF	57.3	60.3	63.6	68.7
	TLF	56.7	62.8	76.6	72.9
Continental	PLF	51.7	48.1	55.4	58.1
	TLF	50.1	45.7	54.7	54.4
Delta	PLF	63.4	63.0	70.9	70.7
	TLF	44.3	45.3	51.3	54.1
Eastern	PLF	65.0	66.4	74.8	74.9
	TLF	48.4	49.4	55.7	54.8
Hawaiian	PLF	77.3	76.8	78.9	79.3
	TLF	59.4	59.5	61.3	61.7
Inland	PLF	51.1	48.6	55.6	61.6
	TLF	50.1	48.9	56.0	61.9
MCA	PLF	63.9	60.3	66.8	62.7
	TLF	63.4	60.7	66.3	59.1
National	PLF	67.5	67.9	70.3	67.8
	TLF	50.6	51.3	52.7	49.8
Northeast	PLF	41.1	42.9	46.4	56.8
	TLF	23.7	33.6	39.5	47.8
Northwest	PLF	50.8	49.2	64.4	71.9
	TLF	47.5	48.2	58.6	61.4
PCA	PLF	40.6	38.8	51.1	63.9
	TLF	36.7	34.8	43.6	50.9
TWA	PLF	59.7	55.5	63.3	71.3
	TLF	58.2	55.5	64.2	69.0
United	PLF	67.2	64.9	75.1	82.2
	TLF	55.2	48.8	61.7	65.8
Western	PLF	51.9	52.4	62.5	66.9
	TLF	50.2	51.9	61.8	64.7
Average	**PLF**	**60.3**	**58.8**	**68.2**	**73.4**
	TLF	**51.4**	**50.1**	**58.7**	**61.8**



Covering the Country—The Martin 2-0-2 last week completed its zig-zag course across the country on its unique eight-day CAA-supervised certification test, covering 18,000 miles and logging 75 flight hours. Forty-four towns shown above were on the scheduled itinerary. The ship was the first to undergo the accelerated service test which CAA on May 15 began requiring of all new transports. As this went to press, company officials were momentarily expecting issuance of the type certificate from CAA. Early this month the Glenn L. Martin Co. delivered an "NX" model to Northwest Airlines, with two more scheduled for NWA later this month.

Douglas Successor to DC-3 Undergoes Airline Scrutiny

Engineering specifications of the DC-9, proposed by Douglas Aircraft Co. as a successor to the DC-3, are now being studied by airline executives to whom the "specs" have been distributed.

Designed for "milk run" routes requiring frequent landings and take-offs and use of relatively short runways, the DC-9 is regarded by Douglas officials as a great improvement over the DC-3 but is not considered as a potential competitor of the Martin 2-0-2 and 3-0-3 or the Convair 240 Liner.

With a gross weight of 30,000 pounds, the DC-9 is designed to carry up to 28 passengers. Useful load would be 10,406 pounds, with passengers accounting for 4,620, cargo and baggage 2,380, and crew, fuel and equipment taking up the remainder.

Powered by two Wright Cyclone 1820 engines, with Curtiss reversible pitch, full-feathering propellers, the plane is designed for guaranteed performance of 257 mph at aproximately 11,600 feet. Range at 10,000 feet is 2,460 miles at an average air speed of 167 mph, and 1,000 miles at an average speed of 263 mph. On short hops the average air speed is 262 mph, and at 20,000 feet it is 286. Runway requirement for take-off at sea level at 30,000 pounds gross is 3,640 feet; landings at 29,000 pounds gross would require 3,800 feet of runway.

Specifications are for a low-wing monoplane, with full cantilever wing and tail surfaces, semi-monocoque fuselage and retractable tricycle landing gear. Overall length of the DC-9 would be 70 feet 8 inches, with a wing span of 101 feet, a maximum fuselage cross section of 118 inches, a wing area of 850 square feet, and a wing loading of 35.3 pounds per square foot. Stalling speed with flaps at 55 degrees is 73 mph.

Large Cargo Space

The specifications call for a cargo capacity of 357 cubic feet. There is a crew and cargo door forward on the starboard side, a cargo door in the rear on the starboard side, and a passenger door on the port side.

Cabin of the DC-9 is designed for pressurization, a feature that would be optional with purchasers and would increase the empty weight by 750 pounds. Cabin windows are 18 by 16 inches. The center aisle is 16 inches wide and has a head clearance of 80 inches. Lighting, interior cabin decoration and other refinements are left to the tastes of individual airlines. There is a lavatory aft.

Emphasizing that the DC-9 is still in the specifications stage, Douglas engineers would hazard no estimate as to what such a plane might sell for. It was pointed out that no prototype has been built, and none will be built until the company has had an opportunity to receive and analyze reactions of airline officials to the plane.

Flood of Non-Stops Forms New Pattern of Air Service

By Keith Saunders

The complaint voiced some months ago by the chairman of the Baltimore City Aviation Commission to the effect that "10 transports fly over our city to each one that stops here" is one which soon may become applicable to many major cities on the nation's air routes.

For this is the era of the non-stop flight, inevitable outcome of the increasing demand of air travelers for speedier transportation and the increasing need and desire of the airlines to reduce direct flight costs as much as possible.

No airline passenger today is happy about spending two hours on a Washington-Newark flight which stops at the intermediate points of Baltimore and Philadelphia, when he can fly the same distance non-stop in a DC-4 in one hour 17 minutes, or in a Constellation in one hour flat.

And no airline cares to make any more of these "milk runs" than are necessary, for today's transport planes are designed for the most economical and most profitable operation over long distances and at high average block-to-block speeds, and each letdown and take-off at an intermediate route point adds to operating costs and reduces the average speed.

It is no wonder, then, that the nation's certificated airlines in the past 18 months alone have obtained Civil Aeronautics Board authorizations to inaugurate 475 non-stop schedules, ranging in distance from less than 200 miles to more than 2,000 miles. Not all of these have been inaugurated, for some on further study did not appear to the airlines to be economically feasible to operate, but most of them are now being flown on one or more schedules daily.

Better Service

This doesn't necessarily mean that the scores of cities which are intermediate points between major traffic-generating points or termini on the same route are getting any *less* service; it simply means that passengers wanting to fly longer distances in less time are getting *more* service.

History of the non-stops dates back to 1938, when the Civil Aeronautics Act was passed and one of the Board's first duties was to convert air mail route contracts into certificates of public convenience and necessity under the "Grandfather Clause" of the Act—Sec. 401. At that time the CAB held, with respect to non-stop flights, that such services could be inaugurated upon compliance with stipulated procedures, except that:

1. Service between two points on two different routes had to be operated via a junction point between the two routes, and non-stops between two such points could not be inaugurated without an amendment to the applicant's certificate. 2. Non-stop flights between two points on the same route involving a "substantial departure" from the route outlined in its certificate could be inaugurated only after CAB had found at a public hearing that the public interest was not adversely affected.

Scores of non-stops were authorized under this section of the Act. Many were contested, some successfully, by competing carriers or by the cities to be bypassed by such services. Most of them were approved without a hitch, though, and were put into operation. Then came the war years, and the airlines simply did not have enough equipment to operate many non-stops and at the same time to maintain anything like adequate service to intermediate certificated route points. Nor were the DC-3 and the Lodestar the ships then most commonly used, practically adaptable to non-stop operations. With the end of the war, however, and the advent of four-engined transports, the airlines again began to file non-stop applications in large numbers.

A case decided August 21, 1945, the week after V-J-Day, set the ball rolling. Transcontinental & Western Air had applied for a non-stop on its St. Louis-Detroit route (No. 58), which it was certificated to serve via the intermediate points of Cincinnati, Dayton and Toledo. The application was opposed by American Airlines and Chicago & Southern, chiefly on the grounds that granting of the application would "in effect" create a "new route" for which public convenience and necessity would have to be proved.

CAB approved the application, making it clear in its decision that questions of the manner of serving, and the frequency, adequacy and amount of service to other points on the route is not an issue in a non-stop proceeding. It found, furthermore, that the 64-mile saving the non-stop would effect, together with the elimination of one or more stops and a consequent saving in time, would benefit the public, and that benefits which would accrue through the improved routing for passengers on TWA's system in the west to and from Detroit would outweigh any possible adverse effect to competitive carriers.

The Board's policy with respect to non-stops was shown in this decision to be liberal, and this liberality, together with the postwar acquisition by the airlines of greater numbers of high-speed, long-range aircraft, accounts for the nearly 500 non-stop authorizations sought by the airlines and granted by the CAB since January, 1946.

The airlines were still subject to the restriction relating to non-stops between two points on two different routes, and the logical way to circumvent this, provided Board approval could be obtained, seemed to be to consolidate certain routes so that the points desired to be served with non-stops would then be on the same route.

First Major Case

There had been route consolidations before, but the first major case of this nature was decided by CAB on Sept. 23, 1946, when American Airlines' Routes 18 and 32 were consolidated into and made a part of Route 4, PCA's Route 32 was merged into Route 14, TWA's Routes 36, 37, 61 and 67 were merged into Route 2, and United Air Lines' Routes 62 and 66 became a part of Route 1.

These route consolidations were effected by the Board by amending airline certificates so as to change the status of route junction points from that of a common terminal point on separate routes to that of an intermediate point on a single route. It was pointed out that these consolidations would make for more flexible scheduling, improved service and administrative savings in bookkeeping, preparation of forms, etc. But the Board even then was becoming cognizant of the need for more non-stop authorizations and said that in its decision it had given consideration to "the probability that many new non-stop operations will result if the Board grants the applications."

Since then, there have been other important route consolidations. Eastern Air Lines last January 9 was authorized to consolidate Route 40

Simplifying Non-Stops

Simplification of the procedure required when a carrier wants to begin a new non-stop service is proposed in a draft release of a revision of the CAB's economic regulations now being circulated for industry comment.

Under the suggested new rule, carriers will not be required to obtain prior permission to start a non-stop service, and the present necessity of filing "non-stop notices" with the Economic Bureau of CAB will be eliminated. Instead, a carrier can begin non-stop service merely by filing a schedule change in the normal way required in cases of adding any other service.

The proposed revision will not apply to services to points outside U. S. territory.

and parts of 47 and 6 into Route 10. Last March 19, the Board authorized merger of Braniff's Routes 9, 15 and 50 into Route 9, and merger of Chicago & Southern's Route 53 into Route 8.

The consolidations were climaxed in May, when the CAB approved consolidation of American's Routes 4 and 30, United's 11 and 1, and TWA's 2 and 44, so as to permit these three transcontinental carriers to "take fullest advantage of the inherent attractions and economies of four-engined equipment" by inaugurating non-stops from Chicago to Los Angeles.

This was all in keeping with CAB Chairman James M. Landis' public assertions that the Board, since the advent of four-engined equipment, had been faced with the necessity of reshaping the obsolete "DC-3 air route pattern." The May decision only served to emphasize that CAB was becoming increasingly aware of the urgency of remolding the route pattern so as to take fullest advantage of the range and speed of such planes as the Constellation and the DC-6.

Beneficial Effects

And what are the effects of these route consolidations and the resulting non-stops? To the air traveler, it means there are more and more points between which he can now count on flying in a minimum of time and without the inconvenience of letdowns at several intermediate points and illogical junction points. To the airlines it means a lot more than that.

It means, for instance, that many routes can now be flown over the most direct flight course, with mileage savings of up to 200 miles or more on a transcontinental flight.

It means average speeds can be increased. On Constellations, for example, it is estimated the average block-to-block speed increases from 145 miles-per-hour on a 50-mile flight to 225 mph on a 250-mile flight, to 260 mph on a 500-mile flight, and to 280 mph on a 1,000-mile flight. Thus, the higher average speeds possible on a long non-stop mean that a given piece of equipment can fly more revenue passenger miles in a given period and will have a higher utilization.

It means savings in direct operating costs. On the DC-4, it is estimated direct flight costs decrease from 56c per mile on a 200-mile flight to 49.9c on a 400-mile flight, 46.2c on a 1,200-mile flight, and 45.8c on a 2,000-mile hop. Direct costs on the Connie are estimated to decrease from $1.28 per mile at 50 miles to 90c at 250 miles, 78c at 500 miles and 73c at 1,000 miles.

It means elimination of both time and expense in making numerous intermediate stops. Each intermediate stop made with a DC-4 requires about 15 minutes of maneuvering time (letdown and approach) and about 20 minutes of ground time, or a total of 35 minutes, during which time the plane could fly 135 miles at normal cruising speed. As to expense, it is estimated intermediate stops with four-engined planes add an average of $25 to $30 to direct flight costs.

Improved Schedule

It means an improvement of schedules, greater flexibility of schedules, and an over-all increase in operating efficiency. It means the straightening out of dog-legs and circuitous routes and makes many airline routes bear a more direct relation to the normal traffic flow.

This emerging pattern of route consolidations and non-stops means, in short, more service to the public at less expense to the airlines.

Air Cargo, Inc. Opens Regional Office in San Francisco

Air Cargo, Inc., extended its activities to the West Coast recently, following a Denver conference between ACI officials and representatives of air carriers serving the western part of the country.

Fred M. Glass, ACI president, formally opened ACI's second regional office at San Francisco (Chicago was first), and placed Jack Houghton, western regional manager, in charge. Preliminary arrangements also were made during the tour for the early activation of freight terminals at Los Angeles and San Francisco municipal airports.

What's the Weather?—

United Air Lines reports that "What's the weather?" inquiries have dropped appreciably since setting up weather information boards in its terminals and traffic offices containing data received at 6-hour intervals from 17 key points on its system. The 2½ by 3-ft. boards include a U. S. map showing UAL's route, while the typewritten bulletins report current temperatures, clear or cloudy, rain, snow or fog.

Aviation Calendar

Aug. 16-17—Oakland, Calif., Air Show, 20th anniversary of Dole flight, auspices Junior Chamber of Commerce.

Aug. 21-22—SAE West Coast Transportation & Maintenance Meeting, Biltmore Hotel, Los Angeles.

Aug. 25-27—Boeing symposium on high-altitude flight, Seattle.

Aug. 30-Sept. 2—National Air Races, Cleveland.

Sept. 8-12—Instrument Society of America, second annual conference and exhibit, Hotel Stevens, Chicago.

Sept. 15-17—Air Force Association first annual convention, Columbus, Ohio.

Sept. 16-18—Second Regional CAA Conference, Atlanta, Ga.

Sept. 24—Meeting of aviation lawyers, Empire Room, Hotel Cleveland, Cleveland, Ohio, during American Bar Association convention.

Oct. 2-4—SAE Autumn Aeronautics Meeting, Biltmore Hotel, Los Angeles.

Oct. 3-4—Arizona State Aviation Conference, Douglas, with Arizona Airmen's Association.

Oct. 26-28—National Association of State Aviation Officials, Ft. Worth, Tex.

Nov. 4-7—National Airport Show and Institute, Municipal Auditorium, Cleveland. Sponsored by Air Foundation and National Aeronautic Association

Nov. 6-7—SAE Fuels and Lubricants Meeting, Hotel Mayo, Tulsa, Okla.

Nov. 19-22—Fifth Annual National Aviation Clinic, Springfield, Ill., State Capitol.

Dec. 1-3—SAE Air Transport Meeting, Hotel Continental, Kansas City, Mo.

International

Aug. 16—ICAO Communications Working Committee, Mexico.

Aug. 19—ICAO Airdromes, Airways and Ground Aids Division, Montreal.

Aug. 21—IATA Financial-Insurance Sub-Committee, Paris.

Aug. 25—IATA Financial-Accountancy and Statistical Sub-Committee, Paris.

Aug. 28—IATA Financial-Clearing house Sub-Committee, Paris.

Sept. 10—IATA Technical Conference, Nice.

Sept. 3—IATA Financial Committee, Brussels.

Sept. 6—Institute of the Aeronautical Sciences and Royal Aeronautical Society, joint conference, London, England.

Sept. 9-12—Aviation Display and Flight Demonstrations, Society of British Aircraft Constructors, Radlett, England.

Sept. 10—ICAO Legal Committee Meeting, Brussels.

Sept. 16—ICAO Radio and Communications Division, Montreal.

Sept. 16—IATA Technical Committee, Nice.

Sept. 17—ICAO Meteorological Division, Montreal.

Sept. 23—ICAO Aerodromes Air Routes and Ground Aids Division, Montreal.

Sept. 23—ICAO joint Airlines Operating Practices Division, Paris.

Sept. —ICAO Special Airworthiness Meeting on Temperature Accountability, Europe.

Oct. 6—IATA Executive Committee, Rio de Janiero.

Oct. 7—IATA Traffic Committee, Rio de Janiero.

Oct. 8—ICAO Meteorological Division, Montreal.

Oct. 14—IATA Third Annual General Meeting, Petropolis, (Near Rio).

U. S. Airlines Serve 91% Of Certificated Mileage

Despite all manner of delays and difficulties, the nation's airlines had inaugurated service, as of the end of July, over 91.5% of their total certificated route mileage, according to records of the Civil Aeronautics Board.

A CAB statistician pointed out that this did not necessarily mean 91.5% of the certificated route mileage was actually being operated as of that date, for service in some cases had been inaugurated and subsequently suspended.

One such case was the Board's approval last fall of the "Barreiras cut-off" route between Belem and Rio de Janeiro, whereby Pan American Airways was allowed to fly a direct course between the two points instead of following its old circuitous route around the hump of Brazil. There have been other cases wherein certain services have been suspended, but these instances are infrequent and would not substantially affect the tabulations made by AMERICAN AVIATION.

These tabulations showed that CAB had issued certificates covering a total of 286,156 route miles, and that the certificate holders had inaugurated service over 262,030 miles of these routes. Major gaps, since the opening of Northwest Airlines' Orient route last month and inauguration of Colonial's service to Bermuda on August 1, are in Mexico and South America, behind the Iron Curtain in Europe, and in the domestic feeder-line picture.

Internationally, American carriers have been stymied to date in inaugurating service over certificated routes totaling 17,738 miles. Western Air Lines, certificated to fly a 1,640-mile route from Los Angeles to Mexico City, via San Diego and La Paz, has been unable to obtain landing rights from the Mexican government, and Eastern Air Lines has been prevented from opening its 917-mile New Orleans-Mexico City route for the same reason, as also has Braniff on its 728-mile San Antonio-Mexico City route.

Braniff Has Trouble

Braniff has also had difficulties in negotiating for inauguration of service over its 6,872-mile route from Houston to Asuncion, Brazil, and thence on to Rio de Janeiro on one route segment, and to Buenos Aires on another. In the Caribbean area, Chicago & Southern Air Lines is certificated to fly 3,697 route miles from New Orleans to Havana and San Juan, and from New Orleans to Havana and Caracas, Venezuela, but has not been able to extend operations beyond Havana.

American Overseas Airlines, under Foreign Air Mail certificate No. 24, was authorized to fly from this country to Greenland, Iceland, Ireland, Netherlands, Denmark, Norway, Sweden, Finland, Estonia, Latvia, Lithuania, Germany, Poland and Russia, serving Leningrad and Moscow in the latter country. Service into the Scandinavian countries, the Netherlands and Germany was inaugurated last year, but it was not until a few weeks ago that the carrier was enabled to penetrate the Iron Curtain even to the extent of serving Helsinki, Finland, and it still has not succeeded in obtaining permission to fly the remaining 1,152 certificated route miles serving the small Baltic countries, Poland and Russia.

The other international carrier not serving all its certificated route mileage is TWA, which holds a certificate to fly to Shanghai but has not yet been able to start service over the 3,417 certificated miles between Bombay and Shanghai, via Calcutta, Mandalay, Hanoi and Canton.

Even with all these unoperated routes and route segments, however, the 12 international carriers, as a whole, have inaugurated service over 155,203 miles, or 89.7% of their total certificated route mileage of 172,941.

Feeders are Slower

With regard to the feeder airlines, the 10 to whom certificates have been issued by the CAB have inaugurated service over 6,345 of their 11,620 certificated route miles, which is only 54.6%. Three of them—Wiggins Airways, Aviation Enterprises, and Central Airlines—have not yet started service over their 3,775 certificated route miles, Wiggins because it feels it must have more than its present 643 route miles in order to have a feasible operation, and the latter two because they have not had their certificates long enough to be able to clear away all the red tape preliminary to beginning operations. Other feeders are operating from 50.2% to 100% of their route mileage.

The other domestic airlines have inaugurated service over 98.9% of their 101,595 certificated route miles. Western Air Lines at the end of July had not opened the 681 miles of its Route 63 from San Francisco to Portland and Seattle, Northeast Airlines was not operating a 216-mile route segment from Portland, Me., to Burlington, Vt., via five intermediate points, and American Airlines had not yet begun to serve Wilmington, Del., on a recently-granted extension of its Route 25 from Washington to Newark-New York, via Wilmington. Otherwise, the non-feeder domestics are operating all of their certificated route mileage, although there are instances where, because of inadequate airports or other operating reasons, specific route points are not being served.

Route Mileage Scoreboard

DOMESTIC

Airline	Cert. Route Mileage	Mileage Inaugurated	% Cert. Mileage Inaugurated
All-American	1,521	1,521	100
American	17,897	17,681	98.8
Braniff	4,831	4,831	100
Caribbean	206	206	100
C & S	3,079	3,079	100
Colonial	1,389	1,389	100
Continental	2,911	2,911	100
Delta	5,793	5,793	100
Eastern	11,758	11,758	100
Hawaiian	356	356	100
Inland	1,910	1,910	100
MCA	3,451	3,451	100
National	2,632	2,632	100
Northeast	2,109	1,893	89.7
Northwest	7,300	7,300	100
PCA	4,253	4,253	100
TWA	10,943	10,943	100
United	17,684	17,684	100
Western	3,972	3,291	82.8
Total	**101,595**	**100,482**	**98.9**

FEEDERLINES

Airline	Cert. Route Mileage	Mileage Inaugurated	% Cert. Mileage Inaugurated
Av. Enterprises	1,824	....	....
Central	1,306	....	....
Challenger	1,613	1,559	96.6
Empire	709	695	98
Florida	463	463	100
Monarch	1,499	937	62.5
Pioneer	1,417	1,413	99.7
Southwest	1,274	1,129	88.6
West Coast	870	437	50.2
Wiggins	643	....	....
Total	**11,620**	**6,345**	**54.6**

INTERNATIONAL

Airline	Cert. Route Mileage	Mileage Inaugurated	% Cert. Mileage Inaugurated
American	1,550	1,550	100
AOA	9,066	7,914	87.3
Braniff	7,600	....	....
C & S	3,697	685	18.5
Colonial	1,600	1,600	100
Eastern	917	....	....
National	445	445	100
Northwest	14,652	14,652	100
PAA	100,000	100,000	100
Panagra	10,666	10,666	100
TWA	21,108	17,691	83.8
Western	1,640	....	....
Total	**172,941**	**155,203**	**89.7**

Note: Operations to U. S. Territories and into Canada are included by CAB in the domestic totals.

British Spend a Million On Mid-Air Refueling Tests

By Eric Bramley

After flying for several hours through darkness between Bermuda and the Azores in a British Lancaster bomber, it's rather a startling sight to see, shortly after daybreak, another Lancaster suddenly appear out of nowhere, come up behind your plane, attach a hose and give you enough gasoline so that you can continue your trip to London non-stop.

Yet this is what has been happening this summer over the Atlantic. The British government is spending $1,000,000 to find out if refueling its transport planes in flight would be technically and economically feasible.

Last month, we made a round trip flight between Bermuda and London —the first American, we are told, to ride on the flight refueling experiment. The 12 experimental flights, which are about completed now, are being operated by British South American Airways Corp. Flight Refueling Ltd., a private British company, is doing the refueling, and the British Ministry of Civil Aviation is paying the bill. There will be London-New York non-stop experiments this winter.

The great proponent of refueling in flight is Sir Alan Cobham, head of Flight Refueling Ltd., who has been working on the project since 1932. Sir Alan never tires of talking about flight refueling and what he thinks it can do for British aviation. If a plane is specifically designed for flight refueling, with a fuselage to carry a large number of passengers, the British airlines' annual revenue would be increased by millions of dollars, he says. Even the present British types, which will not be anywhere near as good as was expected, could increase their passenger loads materially if they took on gasoline after they were in the air, he claims. And he adds, without urging, that jet planes, which eat up fuel in a hurry, will need flight refueling.

"Our only competitor is atomic energy," he told us.

Simple and Safe

Whether Sir Alan's claims are right or not, the fact remains that technically, at least, mid-air refueling seems quite simple and safe, at least in clear weather. And Sir Alan is emphatic in his claims that refueling can be accomplished in all kinds of weather. In 15 years, there has never been an accident, he points out.

In the Bermuda-London experiment, the Lancaster "airliner," before leaving Bermuda, informs the tanker plane, based at Santa Maria in the Azores, of the rendezvous point and the estimated time of arrival at that point. This may, of course, be altered as the flight progresses. As an additional aid in helping the planes find each other, tankers are fitted with Rebecca radar equipment, which is a combined transmitter-receiver and operates on the Eureka responder beacon carried by the airliner. The planes start using this radar when they come within 60 or 70 miles of each other.

We made contact with the tanker shortly after dawn, near the Azores (instead of flying a direct Bermuda-London course, the airliner, for the purposes of this experiment, takes a longer route near the Azores). The tanker took a position below and slightly to the right of our airliner's tail. The airliner then trailed a 20-ft. wire from its tail with a weighted grapnel on the end. The tanker fired a line-throwing gun into the arc of the wire, the line hooked into the grapnel (initial contact neutralizes electrical potential) and the airliner's wire was reeled into the tanker. The tanker then assumed a position above and to the right of the airliner's tail.

The hose was attached, passed over and connected into the tail of the airliner, from where a pipe will carry the fuel to the tanks. Nitrogen was first passed through the system as a fire preventative. Gasoline was then transferred at about 100 gallons per minute, and the system was again flushed with nitrogen before the hose was released. The release was accomplished by paying out the hose on the wire from the airliner. When the hose was sufficiently clear of the plane, the tanker turned away, a weak link in the wire broke, and the hose was free to be reeled into the tanker.

Took 18 Minutes

On the Bermuda-London crossing, a 3,891-mile trip which took 15 hrs. 37 min., our aircraft took on 800 Imperial gallons, the entire operation taking 18 minutes.

On the return flight, the routine was the same. Making contact with the tanker, our skipper said over the radio: "Give us 2,000 gallons, please." After the hose was attached, the tanker told us at intervals: "You now have 500...You have 750...You have 1,000...You now have 2,000."

"Thank you very much," said the skipper. "See you here next Monday morning." It was as simple as that. The operation took 30 minutes, and the airliner never deviated from its course. London-Bermuda flight time was 17 hours, 35 minutes.

Refueling in Mid-Air—The Lancaster tanker (above) is transferring fuel to the airliner, which remains on course during the operation. The British government is spending $1,000,000 to determine whether refueling of transports in flight is technically and economically feasible.

As contrasted with the technical side, the economics of flight refueling present another problem. If you put less fuel in the airplane on the ground, you may be able to take off with more passengers for a long non-stop flight, but what about the cost of operating the tanker? Is this cost more than the additional payload? Can you always make contact with the tanker?

The British Ministry of Civil Aviation is spending $1,000,000 to find the answers to these and many other questions. Despite Sir Alan Cobham's naturally optimistic viewpoint, most British officials are adopting a wait-and-see attitude.

Included in the $1,000,000 the British are spending will be a series of refueling flights across the North At-

lantic this winter. British Overseas Airways Corp. will fly Liberators, and the tankers will be Lancastrians purchased from Trans-Canada Air Lines. The operation will be London-New York non-stop, and the British may try to get a small part of their million back by hauling freight on the flights.

One British official said that if by flight refueling British aircraft can be brought up to par with American planes, the million would be well spent. And the necessity for getting by with their present equipment, rather than using any more dollars to buy U. S. planes, is undoubtedly the main reason why the British are so interested in flight refueling. This, plus the fact that they believe that eventually airport costs throughout the Empire could be reduced because, they say, flight-refueled planes would require shorter and less expensive runways.

Technically, the problems of flight refueling seem to a great degree to have been worked out. At present, you can sit for hours and argue pro and con on the economics. But by next year, the British should know whether flight refueling has a place in their aviation picture.

REA Seeks Agreements With Cargo Carriers

Railway Express Agency has filed application with CAB seeking authority to engage indirectly in air transportation by "mutually satisfactory arrangements" with non-certificated air cargo carriers.

"It would constitute an undue burden on them (cargo carriers) if they are not free to use all available means to make a complete success of their endeavors (by using) the services which are now presently available by arrangement with the applicant (REA)," said the application.

Helicopter Service Suspends

Skyway Corporation, the first regularly scheduled commercial helicopter service in this country, suspended operations recently, due largely to management difficulties and failure to establish profitable payloads in operating three Sikorsky helicopters between the roof of the Motor Mart building in downtown Boston and Logan International Airport in East Boston. Possibility that the company may reorganize and resume operations has been discussed, but no decision has been reached.

Feeder Changes Name

Aviation Enterprises, Inc., holder of a three-year feeder airline certificate to operate feeder Route 82 in Texas, has changed its corporate name to Trans-Texas Airways, and CAB has given the new name official recognition in a re-issued certificate.

17 Cargo Carriers File

Three days before the Aug. 9 deadline for filing applications for Letters of Registration as non-certificated cargo carriers under CAB Economic Regulation 292.5, a total of 17 carriers had applications on file with the Economic Bureau.

As of Aug. 6, only two of the Letters of Registration had been issued, CAB explaining that the others were "being processed" or "going through channels," to use governmentese. It was expected most of them would be approved. First applicant to be issued a letter was Globe Freight Airline, Inc., of Hartford, Conn.

Slick, Now Common Carrier, Adds 5 C-46's to Fleet

Five additional C-46 Commandos purchased late last month by Slick Airways, Inc., will be modified and licensed for commercial air freight use and moved into the company's transcontinental and north-south system this fall, according to Earl F. Slick, president.

Slick said the new acquisitions, increasing by 50% the airline's present fleet of 10 planes, would boost Slick Airways' freight-carrying capacity to 4,320,000 pounds per month. He claimed this fleet of 15 C-46's would comprise the largest fleet in the aviation industry devoted solely to the carriage of freight.

Slick, which already has transported more than 22 million pounds of air freight, changed over from the status of contract carrier to freight common carrier on Aug. 1. Its common carrier tariff, filed last month with the Civil Aeronautics Board, provides an average rate of 12¾c per ton-mile, its freight rate being less than one-third that of air express and its lowest only 15 to 25% higher than rail express.

The company now operates more than 200 transcontinental and north-south flights per month.

Slick Elected President Of Airfreight Association

Earl F. Slick, president of Slick Airways, Inc., was elected president of the Independent Airfreight Association at a meeting of the trustees in Washington. Other officers elected were:

Robert W. Prescott, Flying Tiger Lines, vice president; Harry R. Playford, U. S. Airlines, vice president; C. F. Willis, Jr., Willis Air Service, vice president; J. J. O'Brien, California-Eastern Airways, vice president; Col. L. H. Brittin, executive director and treasurer; H. Struve Hensel, general counsel.

EAL Offers Employes New Retirement Plan

A new retirement plan claimed to provide the highest ratio of company payments and the lowest deposits by employes into the fund of any airline pension plan in operation today has been announced by Eastern Air Lines.

Considering this ratio of contributions, there is no plan in the air transportation industry that will pay higher retirement benefits to employes, Capt. Eddie Rickenbacker, EAL president, stated.

One unique feature of great value to EAL employes, he pointed out, is the provision entitling an employe to take full benefits of both the company's payments into the fund and his own deposits after 10 years of service from date of employment.

Another feature of the plan gives the employe full credit for past years of service by several liberal provisions. Under these terms, EAL will pay for all past service on an employe's annuity with the exception of the normal waiting period. These benefits, estimated to cost the company $2,500,000 in cash, are based on the employe's salary as of Jan. 1, 1947, and not on his starting salary nor his average salary for the period before that.

The new retirement plan is scheduled to become effective October 1, and to become available to all employes with three years or more of service. It designates a retirement age limit of 65 years for all personnel except captains and pilots, who may retire at 60. Either classification of personnel may retire 10 years earlier, if desired, at a reduced monthly pension.

Employes leaving EAL for any reason whatever before reaching the regular retirement age may, at their option, get back all the money they have paid into the fund, plus accrued interest compounded at the rate of 2%. When there is sufficient cash deposited, an employe, upon leaving the company, can elect to take a paid-up annuity policy starting at the age of 65; or if he has been with EAL for 10 years or more, this paid-up annuity will be based not only on his own deposits but also on company payments toward his retirement.

The retirement plan is being underwritten by the Prudential Insurance Company of America.

Frye Heads General Aniline

Jack Frye, formerly president of TWA, has been elected president of General Aniline & Film Corp. to succeed George W. Burpee, who retires to join the engineering firm of Coverdale & Colpitts. Frye became chairman of the General Aniline board after leaving TWA.

Big Airport Projects Cut from 301 to 172

Cities seeking Federal assistance for construction or improvement of airports of Class 4 size or larger learned last week to what extent their projects would be affected by the Congressional cuts in the Civil Aeronautics Administration's 1947-1948 appropriation.

The effect, in some instances, was not as serious as had been feared, while in others it was more so, but the reductions in Federal-aid grants approved for most of the large city airports ran generally below 50%.

The 1947 Federal-aid airport plan had called for construction or improvement of 800 Class 3 and smaller airports at cost to the government of $45,000,000, and the 1948 program called for building or improving 301 Class 4 and larger airports at cost to the government of $65,000,000.

Many cities for one reason or another were slow in taking advantage of the grants provided for in the 1947 program, and Congress cut the 1948 airport appropriation by exactly 50%, the upshot being that CAA had to revise the programs for the two years and merge the two appropriations to be administered as one fund.

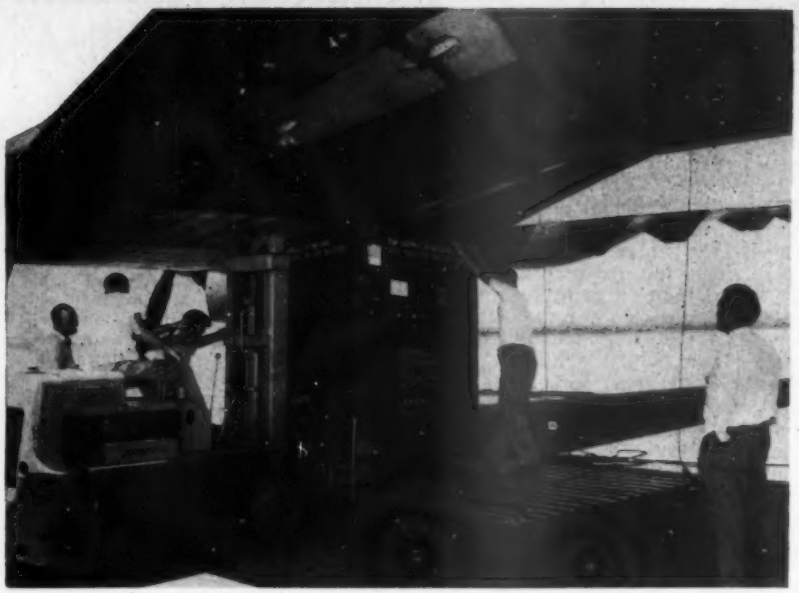
The revised program, announced August 4 by CAA includes 736 Class I, 2, and 3 airports instead of the original 800, and 172 Class 4 and larger fields, instead of the previous 301. To come within the reduced appropriations, it was necessary for CAA to eliminate a number of proposed city airports, for the time being, at least, and to reduce Federal grants to a number of others.

'Aeronautical Necessity'

Some airports, Cleveland Municipal, for example, were not cut at all; others, such as Baltimore's new field, were cut only 25%; while still others, such as Wold Chamberlain Airport at Minneapolis and Weir Cook at Indianapolis were cut by more than 50%. The CAA explained that the program was set up on the basis of "aeronautical necessity," *i.e.*, the importance of the respective airports in the national aviation picture.

The $77,500,000 of Federal funds available for the two-year period consists of $4,087,500 set aside for administrative purposes, $3,315,500 for airport projects in the Territories, $52,572,750 earmarked for the states on a formula taking area and population into account, and $17,524,250 from the so-called discretionary fund.

Actual funds available for use by the cities amount to $66,569,590, of which $35,295,055 is for smaller airports and $31,274,535 for larger projects. Local or state sponsors would be required to provide an additional $70,235,095.



Heavy Cargo—Here's how a one-ton engine was easily unloaded from an Army Douglas C-74 Globemaster at Aviation Maintenance Corp. by using the aircraft's freight elevator. Sixteen engines were flown non-stop from San Antonio to the Van Nuys aircraft service center in the big Army cargo ship and unloaded in a matter of minutes. A monorail in the plane shifted the crated engines onto the elevator. Army is making extensive use of the Globemaster for special cargo jobs.

Pan Am Operates Proving Flight for New Orient Route

A proving flight intended to demonstrate to the Civil Aeronautics Board the feasibility of a new trans-Pacific route to the Orient, including Tokyo, is being run off by Pan American Airways. The contemplated service would operate via Honolulu, Wake Island, Tokyo, Shanghai and Hong Kong to Bangkok.

Replacing the present Shanghai route via Guam and Okinawa, the new route not only would serve Tokyo and restore service to Hong Kong, which PAA served prior to the Pearl Harbor attack, but also would provide an alternate to the present Bangkok route.

EAL Seeks $132,500 Damages from Government

Charging "careless and negligent" operations on the part of pilots of two Army aircraft which collided with two of its passenger planes, Eastern Air Lines has filed civil actions seeking $132,500 damages from the government. One action seeks $125,000 for a collision July 12, 1945, between an EAL DC-3 and an Army A-26 near Florence, S. C., and the other asks $7,500 for an accident Jan. 23, 1945, at Nashville, Tenn.

NAL with 4 DC-6's by Winter

National Airlines expects to have four DC-6's in scheduled operation before winter travel starts. It now has two in service.

Robinson Buys 3 DC-3's

Three 21-passenger DC-3's purchased from Pan American-Grace Airlines are now being overhauled at Bendix Airport, Teterboro, N. J., preparatory to being put into service by Robinson Airlines on runs from the Tri-Cities Airport (serving Binghamton, Endicott and Johnson City) to Buffalo, Albany and New York. Robinson, now operating 7-passenger Beechcraft, hopes to boost its volume of business quite a bit with the new equipment.

CAB Calendar

Sept. 2—Hearing on applications in the Pan American Latin America route consolidation case. (Docket 2811). Examiner Ralph L. Wiser.

Sept. 2—Hearing on applications of Braniff Airways and Pan American-Grace Airways for amendment of their Latin American Certificates. (Dockets 2527 and 2622). Tentative.

Sept. 8—Hearing on applications proposing helicopter mail service in the Chicago area (Docket 2384 et al.). Examiner Ferdinand D. Moran. Postponed from Aug. 18 at the request of the Post Office Department.

Sept. 8—Hearing on applications proposing Additional California-Nevada Service. (Docket 2019 et al.)

Sept. 8—Hearing on Mid-Continent Airlines proposed Minot-Regina extension. (Docket 628). Tentative.

Sept. 10—Hearing on CAB inquiry into transaction of Hughes Tool Co. and TWA (Docket 2796). 10 a. m., Room 229, Federal Building, Los Angeles. Examiner Edward T. Stodola.

Sept. 29—Hearing on Mid-Continent Airlines Route 26 Amendment Case. (Docket 628). Tentative.

Oct. 7—Hearing on applications proposing additional service to Florida (Docket 1668 et al.) Postponed from Aug. 12. Examiner F. Merritt Ruhlen. Tentative.

CAB Briefs

A supplemental opinion issued by CAB in the North Central Case amended Mid-Continent Airlines' certificate for Route 48, granting service to Waterloo, Iowa, as an alternate intermediate point to Mason City.

* * * *

Temporary air mail rates bearing no relation to poundage carried have been set for trans-Pacific and Alaskan operations of Northwest Airlines. The rate from Seattle and Minneapolis to Anchorage, Alaska, was set at 59c an airplane mile and made retroactive to last Jan. 1. Air mail rates from Anchorage to points in the Kurile Islands, Japan, Korea, the Asiatic mainland and the Philippines were set at $1.75 per plane mile, retroactive to July 15, this year.

* * * *

CAB turned down National Airlines' plea for a temporary extension order to fly non-stop schedules between New York-Newark and Havana, advising NAL to wait for the Board to pass on the question after hearing an application already filed in another case.

* * * *

KLM Dutch Airlines' foreign air carrier permit, authorizing services between Amsterdam and New York via intermediate points in the United Kingdom, Eire, Newfoundland and the Azores, has been extended for one year.

* * * *

Colonial Airlines has asked CAB for the right to serve Bermuda from Boston and Philadelphia, in addition to New York and Washington. It also planned to request an extension of present Bermuda routes to Miami, by way of Nassau, in the Bahamas, and for extension of its present Montreal-New York service to Miami.

* * * *

Mid-Continent Airlines has applied for a mail rate for its Tulsa-Houston Route No. 80, which it has been serving since last Feb. 1 without a mail rate. It asked a base rate of 22c per plane mile, to be computed on a daily base mileage of 3,800 miles and a base load of 300 pounds of mail.

* * * *

An increase of 10c over the air mail rate asked in its petition filed last November is sought by Braniff Airways in an amendment to that petition. The carrier asked the Board last fall to set a rate of 20c per plane mile for a base poundage of 300 pounds on its domestic routes from Chicago to Dallas, from Denver to Galveston and from Houston to Corpus Christi. It is now being paid 60c per ton-mile.

* * * *

Reported opposition from the Australian Government did not materialize at a CAB hearing last week on Pan American Airways' application for extension of its South Pacific route from Sydney to Melbourne. Several reports had stated that PAA would not receive landing rights at Melbourne's airport. A representative of the Australian Embassy testified, however, that the Commonwealth "did not oppose" the application.

MID-CONTINENT NEWS

MID-CONTINENT AIRLINES, KANSAS CITY, MISSOURI

MCA 'UPS' SKED PATTERN 4 TIMES IN 6 MONTHS

DeLuxe Air Vacations On Easy-Pay Plan

For the vacationist who looks at the family budget before looking to the "open road," Mid-Continent Airlines, Inc., has a "Budgetour," a deluxe air vacation offering the fastest, most frequent service from the Twin Cities to sunny California on the easy payment plan.

Or vacation-going residents of the Minneapolis-St. Paul area may fly via MCA and connecting airlines to any of the nation's vacation centers and pay for the trip later, on what Mid-Continent calls its Budget Air Travel plan.

Either of the "play now, pay later" package vacation deals can be repaid in 15, 12 or 6 monthly installments.

The "Budgetours" originate now in the Twin Cities (Minneapolis-St. Paul), with the traveler flying MCA to Kansas City and connecting there with Trans World Airline for the hop to Los Angeles. The fun pilgrimage, which includes sightseeing tours of the movie studios and even a drink and supper in a Hollywood night club, carries the 120-day return limit and may be arranged through Twin City travel agents.

If the idea clicks, MCA may set up necessary credit facilities at other points along its system.

Flying Discs Phony, Just Publicity Gag

Three small airplanes fanned out over eastern Texas and western Louisiana the day before the opening of Gregg County, Texas airport, each loaded with disc-shaped invitations which were dropped on principal cities.

The invitations read: "This flying disc is an invitation to come to the grand opening and dedication of the Gregg County Airport, July 14 and 15. Inaugural flight of Mid-Continent Airlines and opening of Dobbs House dining room and coffee shop."

Airport Ceremony Draws Thousands

Mid-Continent Airlines has added to its stock of tall Texas tales—but true—the inauguration of service, July 15, to Gregg County's new three million dollar airport, serving Longview, Kilgore, Gladewater and Greggton.

First flights were welcomed and the terminal was dedicated with a two-day celebration that was heard throughout oil-rich Gregg County, across Texas and neighboring states and up and down the Mid-Continent Airlines route system.

Kitty Adamson, 18-year-old Kilgore College coed, named Aviation Queen in a three-city contest, christened Mid-Continent's first plane.

Paris, Tex., Joins Mid-Continent's Family of Cities

The eyes of Texas were upon Mid-Continent Airlines, Inc., again last month—and there was no indication that the glare would shift from that airline's growing operations in August, as MCA announced its fourth schedule expansion in six months bringing Paris, Texas into its "family of cities."

Inauguration August 1 of twice daily service through this city which calls itself "The North Star of Texas," and is one of 17 Parises in the U. S., marks Mid-Continent's third entry into the Lone Star State. In mid-July the north-south airline extended a hand to oil-rich Longview, Gladewater and Kilgore.

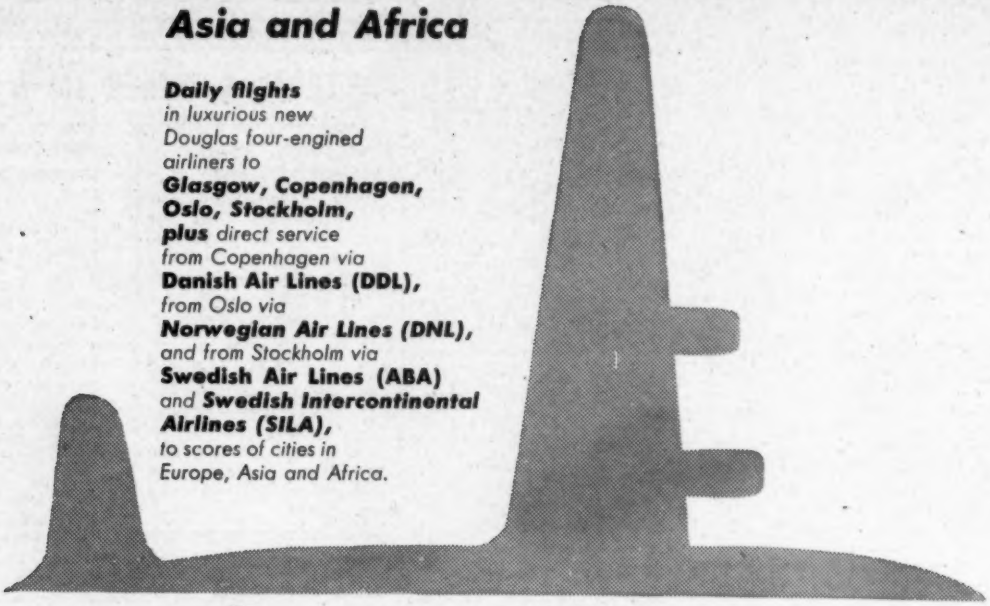
And, back in February, MCA made its initial bow to air-minded Texans when it pushed its Route 80 south to Houston from Tulsa.

For its fourth new addition to the family (service on its new Sioux City-Des Moines route made No. 3 early in April), MCA again called for the bunting and the brass bands.

The city of Paris helped with the shouting for the celebration August 1.

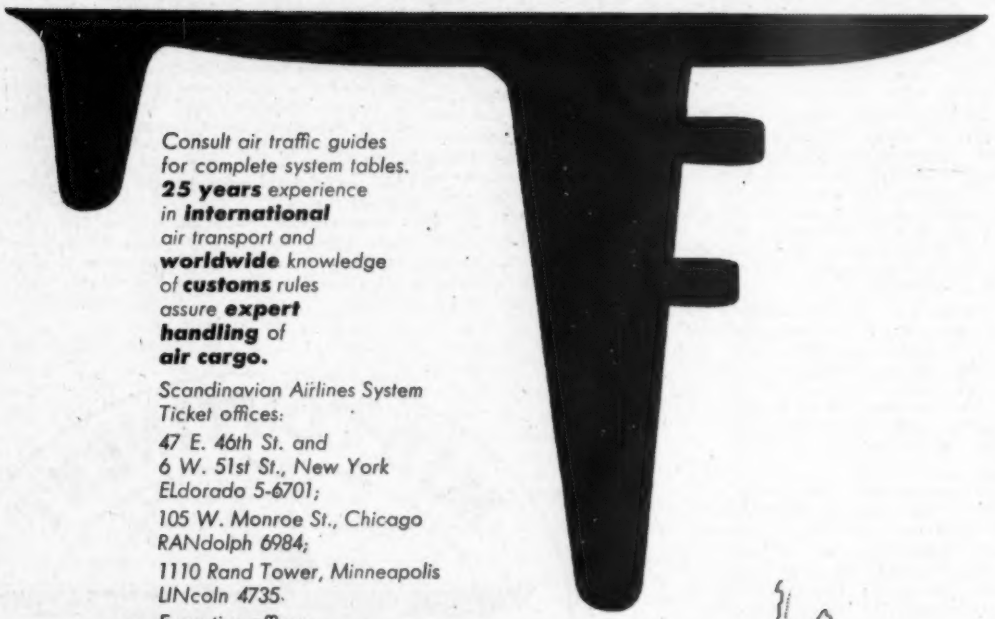
Then, after the party, the city flexed its muscles. As a member of the Mid-Continent family, it now was a neighbor city to Kansas City, Houston, New Orleans—and by direct connection with other airlines, New York, Los Angeles and a score of foreign capitals.

To Europe, Asia and Africa



Daily flights *in luxurious new Douglas four-engined airliners to* ***Glasgow, Copenhagen, Oslo, Stockholm,*** ***plus*** *direct service from Copenhagen via* **Danish Air Lines (DDL),** *from Oslo via* ***Norwegian Air Lines (DNL),*** *and from Stockholm via* **Swedish Air Lines (ABA)** *and* ***Swedish Intercontinental Airlines (SILA),*** *to scores of cities in Europe, Asia and Africa.*

scandinavian airlines system



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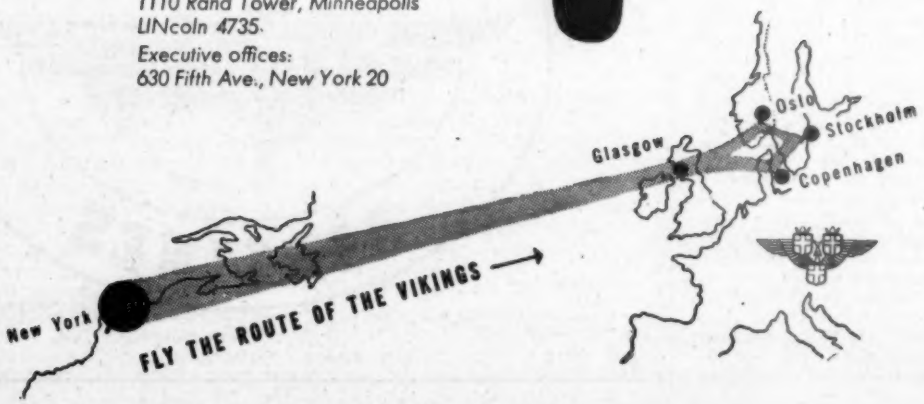

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Split CAB Decision Grants Permit to Peruvian Line

By FRANK M. HOLZ

By a three-to-one decision the Civil Aeronautics Board granted Peruvian International Airways a foreign air carrier permit for scheduled services between Lima and Montreal via Balboa (Canal Zone), Panama City, Havana, Washington and New York. Granting of the permit has ended, at least temporarily, one of the hottest controversies raised by a foreign airline application. (AMERICAN AVIATION, May 15, 1947.)

The majority opinion was signed by CAB Chairman Landis and Members Ryan and Lee. Member Harllee Branch did not participate. Debate centered on the question of substantial ownership and effective control and most of the dissenting report of Member Clarence Young dwells on this point. President Truman signed the permit Aug. 1.

Both majority and minority reports find that PIA is controlled financially by Canadian and U. S. interests, with citizens of Peru participating to only a minor extent. This fact was recognized at the outset by the Peruvian and U. S. negotiators of the bilateral air transport agreement signed Dec. 27, 1946. At that time the parties also exchanged a series of notes whereby the U. S. agreed that a 30% Peruvian holding is acceptable for purposes of the agreement.

Reasons of Reciprocity

The Board is not fully satisfied that valid Peruvian interests amount to even 30%, although Peruvian Minister of Aeronautics, Gen. Armando Revoredo, certified that it is 32%. The Board apparently felt compelled to grant the permit for reasons of reciprocity and national policy, waiving the matter of national ownership and control.

In dissenting, Young admitted that the Bermuda Agreement pattern and the Peru-U. S. air pact do not require the U. S. to withhold the permit from PIA. He insists, however, that the U. S. is pledged to the principle that foreign airlines seeking to fly to the U. S. should be truly national organizations and exceptions should be made only for urgent reasons of security or foreign policy. No such reasons exist in the present case, Young maintains.

The Board concedes the technical competence of the company and its officials, giving considerable weight to the background and ability of PIA's president, Harold L. George, former lieutenant general in command of the U. S. Air Transport Command.

At the time of the hearing, PIA had 112 employees, of which only 23 were Peruvians. The management is required to train Peruvians for all phases of airline operation with a view to eventual Peruvian management. This would presumably take place over the same ten-year period set by the U. S.-Peru notes for bringing about a minimum 51% financial holding by Peruvian nationals or the Peruvian Government.

The Board believes that Colonial Airlines and National Airlines—the most active intervenors—are not justified in their claims that PIA will provide destructive diversion of their traffic. Colonial sought to safeguard its N. Y.-Montreal and Washington-Montreal traffic, National its N. Y.-Havana service. Other carriers whose routes will be paralleled in part by PIA include Braniff Airways, Pan American Airways and Pan American-Grace Airways (Panagra).

Two Round Trips Weekly

PIA contemplates initial operations between Lima and Montreal with two round trips weekly, to be increased to daily flights as soon as feasible. The airline now has five Douglas DC-4's either in service or being outfitted to plush standards (See AMERICAN AVIATION, Aug. 1, 1947). An additional C-54 is being retained for all-cargo use.

PIA has been operating scheduled services for several months between Lima and Havana. Peru and Chile have reached an air transport agreement and on Aug. 11 PIA was to begin regular flights between Lima and Santiago on a Chilean permit granted June 20.

Some Peruvian authorities are quite resentful at the furor in the U. S. over the organization of PIA, taking the attitude that Peru had a right to set up an airline as it pleased. Apparently, PIA has the support and good will of the Peruvian public who regard it as their international airline, despite its foreign capital holdings and nebulous stock structure. It is widely expected that actual inauguration of services to the U. S. will quickly bring in additional Peruvian capital.

One reason for Peruvian irritation is the feeling that the U. S. is considerably indebted to Peru for the favorable bilateral air transport agreement Landis was able to reach with Argentina. Shortly before the U. S.-Argentina talks, Peru held out against the restrictive type of air pact sought by Argentina. Peruvian insistence on an agreement modeled after the standard U. S. bilaterals stymied Argentine plans for an exclusive Argentina-Peru traffic arrangement and, because of Peru's "crossroads" geographic position, also blocked Argentine plans for Great Circle routes to the north. Peru still feels that its stand helped U. S. efforts more than is appreciated.

A Peruvian decree dated July 12 suspends the granting of new licenses for national and international airlines for the rest of the year, pending revision of the nation's aviation laws. This decree would indicate that Peru does not intend to designate any international carrier other than PIA for some time. The decree also grants a life term of six years to present airline concessions.

China-Britain Pact Ends Air Disputes

China and Great Britain have signed a four-year bilateral air agreement, ending several disputes. The Chinese partially won their point of treating flights between British-held Hong Kong and the China mainland as domestic traffic. Only Chinese and British airlines may carry traffic between Hong Kong and China, it is understood.

A separate agreement between British Overseas Airways Corp. and China further limits BOAC traffic on this route to a weekly maximum of 100 passengers, reported at the insistence of the Chinese. This provision apparently violates the Bermuda principle against quotas and traffic limitations which both Great Britain and China have supported at various international meetings. Britain, moreover, signed an agreement with the U. S. to apply the Bermuda principles to future air transport agreements with any nation.

A British official source points out that the quota clause is not part of the governmental pact and was a separate airline deal. Observers point out in turn that BOAC is a government airline and that both BOAC and Ministry of Civil Aviation representatives took part in the British-Chinese negotiations.

The pact gives BOAC traffic rights at Canton, Shanghai, Tientsin and Kunming on designated routes. Chinese carriers receive similar rights at London, Prestwick, Hong Kong, Singapore, Penang and two points in Borneo.

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Iran Restricts Foreign Planes to Specified Routes

The Iranian Government has issued a decree specifying the routes to which foreign aircraft are to be restricted and prohibiting all other flights except by special permission. Although issued in general terms, the decree is believed to be directed at Soviet civil aircraft.

It is reported that Soviet transports have been operating weekly flights from Teheran to Tabriz, Resht and Meshed, despite protests by the Iranians that the operation was unauthorized. It is generally expected that the U. S. S. R. will pay little attention to the decree.

One official of Iranian Airways is reported to state that the Soviet airline is "ignoring regulations, refusing to pay for passenger and landing rights, monopolizing Meshed airport hangars, importing Russian fuel without paying Iranian customs duties and cutting fares."

Pan American Airways has a route through the Iranian capital. Transcontinental & Western Air has a financial and operating interest in the domestic company Irania Airways.

Tour Rates, Second Class Service Suggested by Hildred

Sir William Hildred, director general of the International Air Transport Association, has urged international airlines to become the "vehicle for the factory hand's holiday."

Sir William pointed out there will always be luxury service for those who wish to pay for it, but air transport will attain its full stature only when it does become a vehicle for the masses. Just how to do it may be a question, he added, but suggested that such things as first and second class service, tourists rates, special rates for school children and their teachers all deserve careful study.

Cargo Service With SAAB-90 Planned

The Swedish airline A. B. Aerotransport will try out the Swedish-designed and built SAAB-90 or Scandia on its European cargo routes. The Scandia is a twin-engined tricycle-geared passenger transport developed by Svensk Aeroplan A. B., leading Scandinavian aircraft manufacturer. It is powered by Pratt and Whitney Twin-Wasp engines.

Acting Civil Air Attache

Nigel Bicknell has been acting as civil air attache at the British Embassy at Washington since Air Vice Marshal Robert Willock was recalled to London a fortnight ago for another assignment. Bicknell has been assistant civil air attache since Aug. 1, 1946.

PERSONNEL

* * * *

Administrative:

H. B. Miller, who retired as director of public information for the Navy a little over a year ago to become vice president in charge of public relations for TWA, resigned the latter position July 31. He will announce his future plans after a vacation in England. **Dale Armstrong,** former assistant to the chairman of the board of Northrop Aircraft, Inc., who early last month was named director of publicity in charge of news bureaus for TWA, was expected to succeed him.

Richard B. Walsh resigned his position as executive assistant to H. B. Miller, vice president-public relations for TWA, to become an assistant to H. Carroll Reese, chairman of the Republican National Committee.

W. F. Rogers, former UNRRA director of transportation, has been appointed assistant to the president of Slick Airways, Inc., in connection with the airline's conversion from a contract carrier to common carrier operations.

R. H. Burck, of Braniff Airways, has been given added responsibilities as coordinator of state affairs, a new public relations position. With Braniff since 1936 and in air transportation for 15 years, Burck has been southern regional manager for Braniff since 1943, which position he will continue to hold.

A. Di Pasquale has been appointed director of labor relations for American Airlines, succeeding the late **Lee J. Robison.** Pasquale, a lawyer, was a labor representative and contract negotiator for the Great A. & P. Tea Co. in New York City before joining AA.

John R. Garzero has been named labor relations supervisor in TWA's western regional office in Los Angeles, transferring there from San Francisco. **George C. Rockwell** has become employment supervisor in the L. A. office and his former position of employe activities supervisor has been eliminated. **Richard H. Fuller,** formerly of the TWA training department staff in Kansas City, is now training supervisor at L. A.

David Knight is new supervisor of employe records with TWA, succeeding **John Parker,** who is now supervisor of personnel research.

Traffic and Sales:

George D. Rash is new traffic manager for Continental Air Lines. He joined the company in 1942 as traffic department chief clerk, moved up to director of schedules and tariffs and recently had been administrative assistant to the general traffic and sales manager.

Albert J. Earling, for past two years in charge of traffic and sales for Chicago and Southern Air Lines, has resigned as vice president and director of the company to become president of Southwestern Supply Co., distributors for pre-fabricated houses.

George D. Rash

George F. Scott has been promoted to general traffic and sales manager for Northeast Airlines following resignation of **Warren H. Smith.** Scott brings 12 years of commercial aviation experience to his new position.

Harvey Hancock, formerly manager of traffic, sales and advertising for Pan American Airways' Alaska Division, is now director of traffic and public relations for the division. **Selby Calkins,** who was manager of public relations, is now manager of press relations.

W. B. "Tony" Frank is new chief of cargo sales for United Air Lines in Southern California, with offices in Los

Frank

Drury

Angeles. He succeeds **R. E. Caskey,** who left UAL to join California-Eastern Airways as assistant to the vice president. **W. H. Leverett,** formerly chief air freight agent for United at Burbank, has been transferred to Los Angeles as cargo salesman to assist Frank.

Joseph F. Drury, Jr., former New York news bureau manager for Capital Airlines, is now New York district publicity representative for United Air Lines, succeeding **Ray Conners,** who is associated with a Vermont resort.

Albert M. Rhett, of Miami, has succeeded **James A. Millar** as reservations manager in Delta's Miami office. Millar was transferred to Cincinnati in the same capacity.

Charles Maher, former assistant airport traffic manager for Pan American Airways at Miami, has been appointed district traffic manager at Ciudad Trujillo, Dominican Republic, a newly created post.

Gregory "Pappy" Boyington, World War II Marine ace, has been named West Coast sales representative for the Flying Tiger Line.

Gerard H. Curry was appointed to the newly created post of special representative for interline sales for American Airlines in New York. Curry joined AA in 1929.

Fern Barnes has been promoted from ticket agent to manager of American Airlines' Beverly Hills ticket office, replacing **Joe Murphy,** who took over the duties of chief agent of the Los Angeles airport ticket office. Miss Barnes was replaced by **Mrs. Rena Morgan Darrow,** who was shifted from the L. A. office to the Beverly Hills office.

Gerald J. Keller, who joined Chicago & Southern Air Lines a year ago and had been serving recently as cargo, rates and traffic supervisor, has been promoted to the position of cargo traffic and sales manager, succeeding **E. A. J. Fay,** resigned.

Charles F. Fisher has been named district traffic manager of Western Air Lines at Pocatello, Idaho, succeeding **Norman Kidd** who has been made dtm at Oakland. Fisher formerly was in charge of WAL's office at Grand Junction, Colo.

R. E. Brumbaugh, who was assistant manager of Orlando's San Juan Hotel before joining Florida Airways last January, has been appointed traveling sales representative for the airline.

Roy Hankin, formerly reservations agent for Delta Air Lines in Miami, has been promoted to reservations supervisor at Savannah, replacing **Jack Morgan,** transferred to same position in Atlanta.

Operations-Maintenance:

Clifford Kirby, former Delta Air Lines' chief operator at Shreveport, has been appointed to the newly created position of supervisor of the eastern division in the communications department, with headquarters in Atlanta. He has been with Delta since 1940.

Dale Harper, former Delta Air Lines chief agent at Shreveport, has been promoted to station manager, Lexington, replacing **Jody Brown** who was transferred to Jacksonville as station manager.

Frank H. Patterson has moved up from the position of station manager of Florida Airways' Jacksonville office to that of superintendent of stations, with supervision over 10 offices.

Stinson Voyager owner and family prepare for vacation take-off in America's No. 1 Utility plane.

Why more people are buying STINSONS than all other 4-place planes combined!

THE BEST WAY to discover the many reasons for the Stinson Voyager's overwhelming popularity, of course, is to have your Stinson dealer take you up on a demonstration flight. In the meantime, here are a few facts for you to consider:

1 Stability and Safety. The Stinson Voyager is a "fly-anywhere" plane . . . can land and take off safely from short strips, small fields, even pastures and golf courses. "It almost flies itself!"

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3 Quality features. Flaps for quick take-offs, and slow, short landings. Built-in wing slots for safety. Inherently spin-resistant. Two-way radio with dome loudspeaker. Landing and navigation lights. Soundproofed cabin with controlled ventilation. Starter.

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5 Stinson builds a Flying Station Wagon! America's first combination four-passenger and "cargo" plane. Load capacity: Pilot, and 552 cargo lbs. The two rear seats can be replaced in 5 minutes to make it a 4-place plane.

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John P. Jones was named superintendent of Bermuda operations for Colonial Airlines, which started service to the island resort Aug. 1. Named as station agents for Kindley Field, Hamilton, were: **Nathaniel Hutchings**, formerly with BOAC; **James Mitchell**, formerly with Pan Am, and **Ralph Tengelly. Charles McKinney, Jr.**, formerly with PCA and American Airlines, is chief mechanic for Colonial at Kindley Field.

A. E. "Al" Jordan, formerly superintendent of shop and equipment development at TWA's Kansas City overhaul base, has become manager of production at the New Castle Overhaul Base, succeeding **J. T. Davis**, recently assigned to the Cairo base.

Ruth Marie Blackburn, of Coral Gables, Fla., has been appointed assistant chief stewardess of National Airlines, with headquarters in Miami.

Rahland C. Zinn, who joined Pan American Airways as apprentice engineer in Miami in 1935, has been appointed industrial relations manager for the Latin American Division.

Joan Davis, for the past year assistant in the office of midwest region superintendent of hostesses for TWA, has been appointed superintendent of hostesses for the eastern region, replacing **Lucy Drake**, who resigned recently.

D. H. Jackson has been promoted to station manager at Asheville for Delta Air Lines.

Jasper Barnett, who joined Pan American Airways in 1941, has been named superintendent of schedules for its Latin American Division.

* * * *

Sydney B. Smith has been named chief of Foreign Air Transport Division of Civil Aeronautics Board, succeeding **Harold A. Van Dorn.** Smith has held positions with TWA, Lockheed, and the State Dept.

George B. Gelly, formerly on Douglas Aircraft Co.'s industrial and public relations staff at Santa Monica, has been appointed to represent the company in Washington, taking over duties of **Robert H. McRae** and **John B. Shallenberger.**

D. Roy Shoults has been appointed chief engineer for the Glenn L. Martin Co. Until recently he was v.p.-engineering for Bell Aircraft Corp., and before that was engineer with General Electric's aviation division.

AOA Gets New Director

James A. Jackson, New York investment banker, has been elected to the board of directors of American Overseas Airlines. A native of Troy, Mo., and a banker since 1910, Jackson is a former president of the Continental Bank and Trust Company and was formerly vice president of the National City Bank, with which he was associated from 1916 until 1935. Other directorships he holds are with the Old Ben Coal Corp., Chicago; Reynolds Spring Co., Jackson, Mich.; and Guardian Life Insurance Company, New York.

Airline Commentary

By ERIC BRAMLEY

AS WE TOLD you last issue, we flew to London recently via Bermuda . . . The U. S.-Bermuda portion of the trip was made on British Overseas Airways Corporation from Baltimore, and we want to give BOAC credit for an outstanding passenger service job . . . Seldom, if at all, have we seen passengers handled with such courtesy and dispatch as on this particular trip . . . What with Pan American Airways out of New York, and Colonial out of New York and Washington, BOAC has plenty of competition on the Bermuda run, but with the kind of service they dish out we believe they will continue to get their share of the business . . .

•

TWA has found itself in the middle of a chain letter trick that has ceased to be funny . . . The letter proclaims that "the luck of London has been sent to you" . . . You're not asked for any money, but are urged to send the letter to four other people, with a vague promise of wealth . . . A garbled version of TWA's Washington address is on the letter, and the company's Washington office has received almost 1,000 of them from all parts of the world . . . TWA has no idea how the letter started and has taken numerous steps to try to stop it, but nevertheless has been accused of starting it as a cheap publicity stunt . . . So if you get one, you can do everyone a favor by ignoring it . . .

•

A delightful little booklet has come our way, thanks to L. S. Adamson, of Canadair Ltd., Montreal . . . It's the booklet that Air India (a darned good airline, incidentally) puts on its airplanes to inform passengers what to do and what not to do when flying . . . It sounds like it was written by an American, but Mr. Adamson says he has checked up and it was written by an Indian . . . Here are a few quotes: "We have no time for the man who beats his wife, plays a weak no-trump and overtakes on the left, but he is our buddy compared with the fellow who cancels his passage at the last minute. Where this ghoul is concerned we know no laughter and strong men weep when they see the look in our eyes" . . . **On fountain pens:** "Don't forget to drain some of the ink out of your fountain pen before you enter the plane . . . If you forget to drain, you will have an extra stripe down your suit that the maker never intended" . . . **On air sickness:** "From the tough ones who never suffer from air sickness, we ask a small favor. When your fellow passenger is a little under the weather, don't regard him with amusement or contempt. Don't gaze fascinated at his green cheeks. Pretend you haven't noticed a thing . . . He will realize at once that you are a gentleman, and if he's a lady, it may be a long-term investment" . . . **On leaving things on airplanes:** "Before you leave the plane at destination, please look around to see if you've forgotten anything. Better still, look around in case the other passengers have left something behind, which you can then transfer, deftly, into your trouser pocket. Our directors all wear watches which our passengers originally purchased" . . . And finally, a rather grim reminder concerning the hostesses: "Fine specimens of radiant womanhood, we leave you in their safe hands and ask but one favor—see that yours are as safe. In India men have been known to kill to protect the honor of a sister" . . . This booklet is really good for a chuckle . . . We'll be glad to lend it to passenger service directors upon request . . .

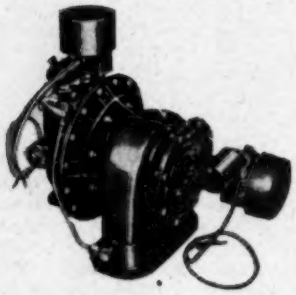
•

There's going to be an airline pilot flying in the National Air Races at Cleveland this year . . . He's a friend of ours, Capt. Dale Fulton, of TWA's international division . . . Last year, Fulton quietly came out of nowhere and walked off with first prize money in the Sohio race at Cleveland . . . This year he's priming his P-51 for the Thompson race and bigger stakes . . . We wish him luck . . .

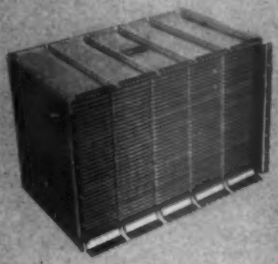
•

American Airlines has put out a well-done leaflet entitled "Let's Talk About Air Travel" . . . It talks about availability of space, discusses safety, maintenance and other subjects, and all in all is a presentation that should make interesting reading for passengers and prospective customers . . . We learn, for example, that tires on AA planes are replaced at intervals equivalent to only 250 miles of ground travel . . . Over 34,456 people call the company every day for reservations and travel information, and AA ticket offices sell over 6,900 tickets each day of the year . . .

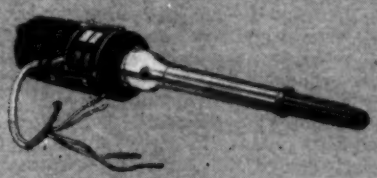
AiResearch



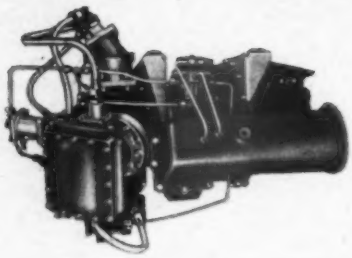
Cabin Pressure Regulators: Perfected for use on the B-29, AiResearch regulators are easy to maintain and revolutionary in performance. They operate on the pressure differential between cabin and outside air, with no other source of power. Cabin altitude and rate of change can be pre-selected.



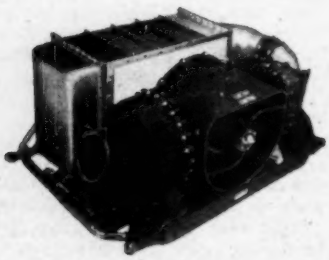
Intercoolers: AiResearch all-aluminum intercoolers increased the high altitude performance of the P-38, the P-61, the B-17, the B-29 and other planes. Today's improved intercoolers continue to excel on all counts — light weight, high cooling efficiency, great structural strength and resistance to corrosion.



Actuators: *First* to produce a linear type actuator, AiResearch makes a complete line of electric actuators. Successful applications include control valves, engine controls and retractable tail skids and nose wheels. AiResearch actuators are famous for light weight, high efficiency and long life.



Cabin Superchargers: This high speed compressor for the new Constellation creates 50 pounds airflow per minute at an output pressure of 15 p.s.i. Variable speed drive keeps output constant despite changes in engine speed. A primary compressor is being produced for the Convair 240.



Refrigeration Units: Used for cooling hot, compressed air from the cabin superchargers, this new Constellation unit incorporates an air expansion turbine, secondary compressor and heat exchanger. Types being produced for various planes have capacities from 7 to 100 pounds airflow per minute.

Oil Coolers: AiResearch oil cooling leadership is long established. *First* with an elliptical oil cooler, *first* with surge protection, *first* with electric flap control, *first* to produce the thermostatically controlled oil cooler shutter, *first* to equip the airlines with aluminum oil coolers.

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DC-3

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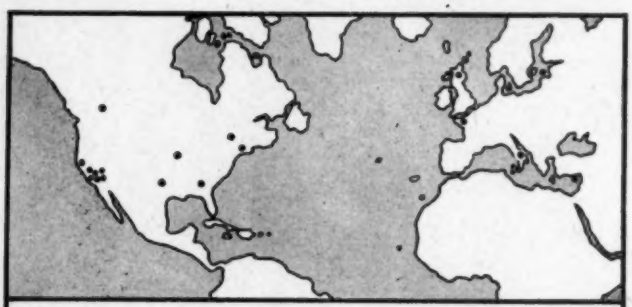

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Grand Central Airport Company
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Northrop Aircraft Company
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6. DC-3, C-47
Timm Aircraft Company
Metropolitan Airport
Van Nuys, Calif.

7. DC-4, C-54
Matson Aviation Maintenance Co.
Oakland Municipal Airport
Oakland, Calif.

8. DC-4, C-54
Texas Engineering & Mfg. Co.
Grand Prairie, Texas

9. DC-3, C-47
Southern Airways Company
Municipal Airport, Atlanta, Ga.

10. DC-3, C-47, DC-4, C-54
Aircraft Service Corporation
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11. DC-3, C-47
Northwest Industries Limited
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12. DC-3, C-47
Canadair Limited, P.O. Box 6087
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13. DC-3, C-47
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Prestwick Airport
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14. DC-3, C-47
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13 Rue de Brederode
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CAA Sticks to ILS Plans Despite Hinshaw Criticism

The CAA has given a verbal brush-off to the idea, expressed by the potent Hinshaw subcommittee in Congress, that CAA's ILS and omni-directional range program should be scrapped in favor of military-CAA cooperation on a system of radar aids.

The brush-off was delivered by T. P. Wright, CAA Administrator, who called a special press conference to reply formally to the published report of Hinshaw's House subcommittee on Interstate and Foreign Commerce (AMERICAN AVIATION, August 1, page 13).

Gist of Wright's reply was that CAA still thinks its radio-beam Instrument Landing System is by far the best low approach or landing aid available today, and that its VHF omni-directional radio ranges are decidedly preferable to the airborne radar and radar beacon navigation system plugged by the Hinshaw committee.

With regard to radar navigation for civilian aircraft, he said the weight and cost of airborne radar equipment would be such as to make its use impractical for any but larger aircraft, and that since small and medium-sized planes still would require aids, the government would be compelled to operate and maintain two different systems of air navigation, which would be prohibitively expensive and extravagant.

Still Prefers ILS

As to landing aids, Wright merely reiterated CAA's position that ILS, even with its present deficiencies and imperfections, should be the primary landing or low approach aid at commercial airports, and that it should be monitored by GCA (Ground-Controlled Approach) radar, supplemented by surveillance radar. He said GCA had certain features making it preferable for use by the military, but that its use as a primary landing aid for civilian planes was not at all practicable. He said there was no fundamental technical disagreement between CAA and the military on this point, despite press articles and testimony before Congressional committees to the contrary.

Asked how he expected to get favorable action on budget requests next year for the ILS and VHF Omni-directional range programs, which run contrary to the expressed beliefs and recommendations of influential Congressional pursestring-holders as to what constitutes the most desirable program, Wright said he felt ILS would prove itself next winter.

The 98 ILS installations for which funds already have been appropriated will be ready for use by fall, he said, and the airlines by that time will have completed indoctrination of their pilots and installation of the localizer and glide path receivers in their planes.

Wright said he was hopeful Congress would "be convinced" of the rightness of CAA's position after next winter's operations. He admitted, though, that there was no basis for a fair test of the relative merits of ILS and GCA, since only four sets of the latter will be in use at civilian airports, against 98 ILS installations.

67 Complete Convair Course

Consolidated Vultee's six-weeks service and maintenance course on the Convair Liner has already graduated 67 instructors and maintenance supervisors from three airlines preparing to use the plane. The group has included 39 from American Airlines, 11 from Pan American, and 17 from Trans-Australia Airlines. Five members of Australia's department of civil aviation have also taken the course.

At the present time, training is being given to new groups from AAL and PAA, plus the first group from Western Air Lines. Other purchasers will start sending representatives to later courses.

EAL to Let Contracts Soon for Miami Base

Eastern Air Lines expects to let contracts shortly for a million-dollar building expansion at its Miami operations and maintenance base. The money will go into erecting and equipping a three-story building, 570 feet long, which will bring Eastern's Miami floor space to 465,000 square feet. A year and a half ago the company was using only 69,000 sq. ft.

The new building, to be used chiefly for line maintenance, will have eight recessed dock areas, each with a 25-foot overhanging roof. There will be four of the docks on either side of the building—each large enough to handle a DC-3, DC-4 or Constellation. One dock on each side will be equipped for quick removal or installation of four engines at the same time.

In addition to all necessary facilities for line maintenance, the building will house engineering offices, stock room, commissary, and accessory and fabric shops.

Second floor of the new structure will be stressed to carry 200 pounds per square foot, or a total of 8,000,000 pounds. The third floor will carry approximately half this load. Flooring is to be of wood over steel structural members. The building has been designed with an almost flat roof to withstand high winds.

EAL officials expect that the building will be ready for use by next summer.

PAA-CNAC Maintenance Agreement

Pan American Airways and China National Aviation Corp. (in which PAA holds 20%) have worked out a reciprocal maintenance arrangement. Each firm will service and maintain transports of the other in its own territory. PAA operates a trans-Pacific U. S.-China service which will be generally paralleled by CNAC after it receives its expected foreign air carrier permit.

For EAL Maintenance—This artist's sketch shows the million-dollar maintenance hangar which Eastern Air Lines will build at its Miami base. The four nose docks shown above are duplicated on the other side of the building. Location will be parallel to 36th Street between Eastern's present main hangar and Le Jeune Road.

Automatic Prop Feathering Improves Payload of 2-0-2

By David Shawe

With high-efficiency propellers, which set up considerable windmilling drag if an engine fails on take-off, some of the new twin-engine airliners cannot meet all CAA takeoff requirements when carrying a full payload. The Martin 2-0-2, for example, might sacrifice as much as 5300 pounds to meet take-off requirements from an airport 4500 feet above sea level. The answer is to feather the propeller rapidly and automatically, reducing drag fast enough to permit the remaining engine to lift a full payload from the runway within CAA requirements.

The Glenn L. Martin Co. thinks it has this answer in a new system which automatically feathers either propeller if torquemeter pressure drops below 20 pounds per square inch for a predetermined interval such as two seconds. Safety features inherent in the system keep the feathering cycle from being activated during momentary power losses due to coughing or sputtering, or in the case of partial power loss in which the engine still delivers enough thrust to offset windmilling drag. In feathering a propeller, the system also cuts off fuel booster pumps to prevent loading the engine.

Martin engineers, in working out the system, estimated that without it the 2-0-2 in meeting CAA requirements would sacrifice as much as 5300 pounds (or 17 passengers and 1700 pounds of payload) at an airport elevation of 4500 feet, or 4000 pounds payload over an average trip length of 300 miles with airport elevations averaging 1000 feet. Preliminary tests of the feathering system have indicated that the entire payload loss can be recovered, with a reduction in direct operating cost per ton mile of as much as 58%.

Provision is made for manually overriding the system and unfeathering the propeller if power is restored after the feathering cycle starts.

The Martin development, which will be applied to the 2-0-2 if the CAA approves it, presupposes that after throttles have been advanced to take-off position and torquemeter pressure has exceeded 80 psi, a drop in pressure to below 20 psi without retarding throttles indicates a complete power failure—since 20 psi means a power output of only 300 h.p., or equivalent to the drag of a windmilling propeller.

The following steps are involved in arming and operating the automatic feathering system:

(1) A cockpit on-off switch must be thrown to the on position, passing power to a throttle limit switch and also turning on a red indicator light;

(2) The throttle limit switch, which is closed by advancing throttles, provides the second step in arming the system for automatic operation;

(3) After advancing throttles, a high torque pressure switch closes when pressure reaches 80 psi. This switch completes the arming operation, lights an amber indicator light for each engine beside the red 'on' light, and passes a signal through an armed lock-in relay to a low pressure switch;

(4) If, during take-off, torque pressure drops below 20 psi, the low pressure switch actuates a time delay relay installed to prevent immediate feathering during momentary power lags. This relay, after a delay of two seconds (or other pre-set interval) signals a feather actuating relay which starts the feathering pump;

(5) The feather actuating relay also signals what is termed a "feathered remembering" relay, which locks in when either prop is feathered manually or automatically to tell the second propeller not to feather automatically.

Neither the throttle system microswitch nor the high pressure arming switch are so critical that they are likely to be set too high not to arm the system during a reduced power take-off. The switch arrangement is designed to prevent the possibility of feathering during a throttle burst before pressure has built up, or if throttles are advanced to take-off position during starting. The 80 and 20 psi pressure switches, and the time delay relay, are adjustable settings adopted as a result of initial experience with the device.

Upping Minimum Altitudes

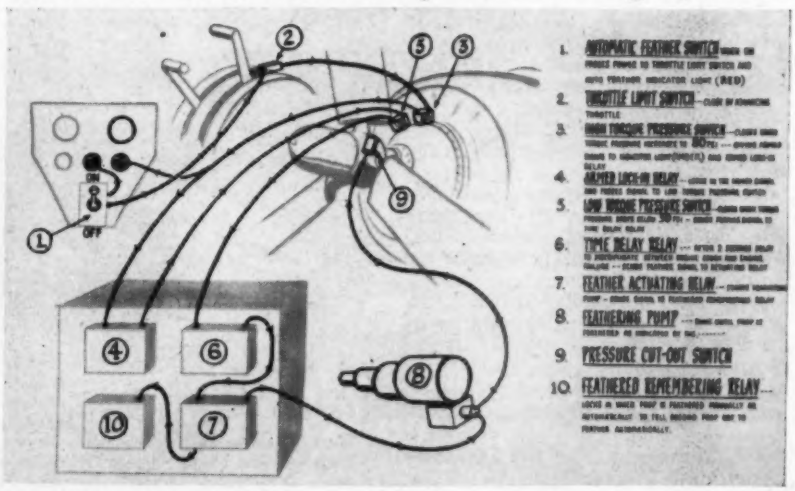
Airline operations officials and chief pilots have been meeting in Washington with CAA and ATA people to work out the details of applying recently proposed increases in minimum flight altitudes over terrain. The President's special air safety board recommended early in August that there be a nationwide standardization, with an increase of instrument minimums from 500 to 1,000 feet (or from 1,000 to 2,000 over rough terrain). Attempts are being made to apply the increases on a route-by-route basis rather than by a single standard for the whole country.

Although there have been some complaints that higher initial approach instrument altitudes may slow down traffic at certain airports, general industry reaction to the proposed increases has indicated an early and amicable settlement. In fact, a number of airlines, with company requirements considerably above existing regulations, will not have to make any changes to meet the higher minimums.

Flight Navigator Date Extended

Effective date of the new Civil Air Regulation requiring airlines whose operations rely on celestial navigation as either a primary or a secondary means of navigation to include a certificated flight navigator in their flight personnel has been extended to Nov. 1.

Martin's Automatic Prop Feathering System



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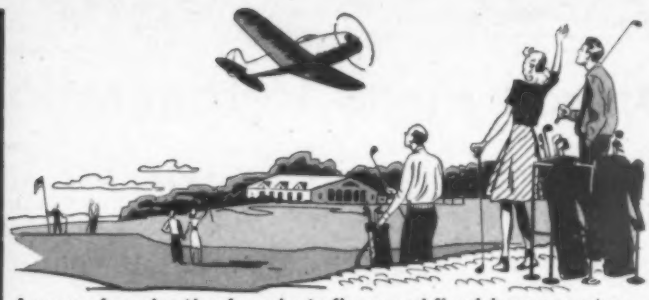

A page of service tips for private flyers and fixed-base operators

How to avoid crankcase foaming

Moisture condensation in your aircraft engine increases crankcase foaming many fold. To avoid this possibility pilots should keep the oil level up to the full mark. In addition to minimizing condensation this practice will help keep oil temperatures lower. One of the many reasons pilots depend on RPM Aviation Oil is because its "defoaming" compound greatly reduces this trouble under all operating conditions.

"Take off" rating important in aviation fuels

The anti-knock characteristics of aviation gasolines are now rated under two operating conditions. In the past these fuels were rated only under cruising conditions, but octane rating during take off has been found to be important. Now, with Chevron Aviation Gasoline exceeding the anti-knock requirements at take off, pilots are assured extra performance when they need it most. Chevron Aviation Gasoline is perfectly balanced to give easy starting, fast take off and dependable protection aloft.

Proper instrument care pays off in safer flying

The proper care of aviation instruments is a simple and inexpensive precaution that pays off in accuracy at crucial moments. A suitable instrument lubricant is required for full protection. The anti-rusting ingredient in RPM Aviation Instrument Oil protects gyro and other instrument bearings from rust due to condensation often found with ordinary oils. That's why it's recommended for all instruments where rusting is a problem.

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Carriers Seek Answer:

Good Plane Refrigeration Needed for Perishable Cargo

By FRED HUNTER

It will take good refrigeration to deliver peaches, plums, grapes and similar perishables with the added quality and extra eye appeal required to establish premium markets for airborne perishables. Until it is achieved perishable shipments will continue to be spotty. Volumes from California to eastern markets this year have been disappointing because shippers still are confining their air movements mainly to seasonal, first-on-the-market produce which can command a brief premium price period purely on the seasonal time element. The substantial volume of regular shipments awaits the installation of refrigeration which will put products into the stores in the same marketable condition that they leave the fields.

Some progress on the refrigeration problem has been made by the air carriers. The Flying Tiger Line thinks it has the answer in a portable mechanical unit developed by its chief engineer, John S. Woodard, who has constructed a prototype model now being used in the company's C-47's. Slick Airways is using a dry ice and air distribution system augmented by a cooling arrangement consisting of a sprinkler system installed on top of the fuselage to cool off the planes on the ground. The only cooling in four-engine planes, however, is a refrigeration compartment United Air Lines has installed in the tail of its DC-4 Cargoliners. This compartment, however, will handle only 2,000 pounds.

Santa Fe Skyways spent $75,000 in cooperation with Douglas Aircraft Co. seeking to perfect a cooling system for its DC-4's, but gave up the project after about 18 months of work after it found it would be unable to obtain the equipment for this summer's shipments. It is now starting all over again from scratch.

California Eastern Airways, in its research into refrigeration for its DC-4 planes, found humidity control more important, and a harder nut to crack than cooling and still is struggling with the problem.

The Flying Tiger Line's conviction that it is on the right track came when Woodard devised methods to derive power for a mechanical unit from the plane's hydraulic system. Ground operation is incorporated within the unit for continuous cooling by hooking it up with a battery cart.

The Flying Tigers first attempted to use a dry ice cooling system, but abandoned it after losing a couple of loads. Woodard then went to work on the mechanical system, using Freon gas, and his prototype model has been put to extensive tests both on the ground and in cross-country operation. The Flying Tigers have flown fresh fish, ripe tomatoes, grapes, flowers, live lobsters and other delicate shipments with marked success. The live lobsters, for example, have been flown from New England to California at an even 40 degrees Fahrenheit and they arrived alive and kicking after a ride at 15,000 feet.

Woodard's prototype model weights 480 pounds, but the compressor and other components are of cast iron and the Tiger engineer estimates that in a production model for fleet installation the weight can be cut in half by substituting aircraft type materials. He estimates a DC-4 unit can be held within 400 pounds.

Woodard's unit, which consists of a compressor, condensor, evaporator and high-speed blowers, in tests has reduced the cabin temperature of a C-47 to as low as 18 degrees. Thermostatically controlled to cut in and out automatically it has maintained temperatures at just above freezing with complete fidelity on the cross-country test flights.

The Woodard portable unit is installed by attaching four bolts holding to the I-beam of the airplane's structure and connecting three hydraulic lines and one electric line. An airscoop fits into a window. The unit can be changed from one plane to another by five men in three hours.

While dry ice methods have the advantage of low initial cost and are simple for operation or maintenance, indications are that satisfactory refrigeration of cargo planes depends upon the efficient development of vapor-cycle or air-cycle systems. With dry ice, humidity control is not possible. Moreover, dry ice procurement, except at larger points, is something of a problem and on transcontinental flight it takes about 800 pounds of dry ice to hold the pre-cooled temperature of 12,000 pounds of perishables, a substantial weight penalty.

Practically all of the carriers and several of the plane manufacturers, are at work on the problem and by next summer's perishable season it is expected sharp improvement in cargo refrigeration will be accomplished.

United Orders 200 RCA Radar Altimeters

An order for 200 radar altimeters (a modified APN-1 type) has been placed by United Air Lines with Radio Corp. of America. The terrain clearance devices are expected to be installed in the entire UAL fleet by this winter.

The complete equipment, including transmitter-receiver, instrument panel indicator dial, warning lights and antenna, will add about 30 pounds to the airplane. It will be set for an effective range, forward and downward, of approximately 8,000 feet.

The instrument panel installation will have a conventional dial for reading distance in feet above the ground, plus green, amber and red lights with a limit switch which can be pre-set to flash a warning whenever the plane approaches the pre-selected clearance above terrain. By watching the indicator needle the pilot can anticipate to some degree the sharpness of a slope below him and thus (by a quick mental triangulation) determine whether he appears to be on a collision course.

United Air Lines plans to use the new altimeters extensively for instrument low approaches, pre-setting them for flashing warnings at altitudes as low as 100 or 200 feet above the ground during automatic approaches. Pilots will thus be relieved of continuous attention to pressure altimeter readings, and can expect a considerable safety factor in having a continuous reading of any irregular terrain around an airport.

United's interest in this type of altimeter dates back to 1938, when the company launched a radio altimeter research program which the war interrupted.

CAA Seeks 200 Aircraft Communicators for Alaska

Two hundred qualified single men are wanted by the Civil Aeronautics Administration to fill jobs as aircraft communicators in Alaska, at starting salaries of $3,306 a year, with additional earnings possible through authorized overtime beyond the 40-hour week and through a 10% differential for night work.

Basic qualifications are the ability to transmit and receive International Morse Code at a minimum speed of 30 words a minute, to touch typewrite at 35 words a minute, and to have 18 months of aeronautical communications experience or an acceptable equivalent in education and experience.

Applicants other than veterans must be between 18 and 40 and in good health. Application may be made to the CAA Aeronautical Center, Box 1082, Oklahoma City 1, Okla.

Need for Tighter Take-Off Rules Seen in CAB Report

At Stephensville, Newfoundland, one night last October, an American Overseas Airlines DC-4 took off for Europe. Runway 7, which the pilot received last minute instructions to use, is the only runway at Harmon Field which does not lead out over water or flat country. Normal procedure was to make a right turn after take-off from Number 7, but the AOA plane climbed straight out. Seven miles from the field, at an elevation of 1160 feet, the plane crashed into a steep ridge.

A CAB analysis of the crash, just released, lists the probable cause as "the action of the pilot in maintaining the direction of take-off toward higher terrain over which adequate clearance could not be gained."

Elaborating on this conclusion, the Board finds that regardless of the possibility of power failure or other factors which could not be reconstructed from the burned wreckage, a normal rate of climb from runway 7 would not have given a safe margin of clearance over terrain northeast of the field.

The Stephensville incident prompted CAB, last May, to prepare and circulate for industry comment some proposed new regulations which would require the establishment of specific procedures for night and instrument take-off from all airports where hazards exist. The accident report stresses that no such clearly defined procedures were in force at Stephensville at the time of the crash. It adds, however, that sufficient navigational data were carried in the plane to permit determination of a satisfactory climb-out procedure, and it also mentions that the pilot, in the course of considerable North Atlantic experience with ATC, had made several previous flights out of Stephensville (an alternate for Gander.)

Continuing its observations on the apparent need for tighter regulation of take-off procedure, the Board points out that the practice of CAA in applying existing regulations has been to confine its surveys to a radius of three miles around the airport—an area considered large enough to permit maneuvering to avoid any obstacles outside that radius. The implication is that a right turn following take-off from Runway 7 should have been a written requirement rather than a generally accepted procedure.

"It is apparent that modern air carrier operation," that analysis states, "is burdening the pilot with the necessity for evaluation of an increasing number of details . . . In this respect, it appears that the burden on the pilot may, to a large measure, be relieved in operations of this nature by clearly defining the procedures required for climb after take-off at night or under instrument conditions."

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GOFOG Experiment Begins At Lockheed Terminal

A fog dispersal experiment using GOFOG equipment has been installed on one of the runways at Lockheed Air Terminal, Burbank, for a service test program being conducted by the developers of the equipment. GOFOG, allegedly less expensive than other methods of burning off fog, stirred up considerable controversy during the winter of 1945-46 when it was installed at Long Beach Airport.

The Burbank experiment will use four new-type vaporizers using automatic-feed fuel oil burners. At Long Beach the burners, which resembled trash barrels, used coal and calcium chloride rather than oil and had to be fed by hand. The new units, feeding chemical powder into the burner, will have a vaporization point of 3000 degrees compared with 1500 at Long Beach. Cost of the pilot burners is around $3,000 each.

W. L. Kerlin, who designed the new burners for the NOFOG Corp., estimates that the four burners will be sufficient to clear one runway, whereas 20 burners would burn off fog to a ceiling of 700 feet over the entire airport. He estimates that it would take approximately 30 minutes at a cost of $5 per minute to clear the whole airport. Fifteen minutes is estimated for the one runway.

Robert V. Burns, manager of the airport, has stated that the installation is being made entirely on an experimental basis which does not commit Lockheed Air Terminal. "We are open-minded about this device and glad to cooperate in having it tested at our airport," he said. "If it proves as effective as its backers claim, it would become one of the greatest aids to aviation ever devised. We await the results of the test eagerly."

Southwest Airmotive Co. Acquires Two More Hangars

In a move to gain more space needed for handling one of the country's greatest volumes of aircraft repair and overhaul work, Southwest Airmotive Co. has more than doubled its maintenance and storage facilities through acquisition of two additional large hangars formerly used by the 5th Ferrying Group of the ATC on Love Field, Dallas.

Combined floor space of the two hangars is 63,778 square feet, and the company also continues to occupy its original hangar, which is 280 by 150 feet, excluding an extension erected for offices. A five-year lease on the two former ATC hangars and ramps, formerly held by the Love Service Co. and dating from August 1, 1946, has been transferred by the City of Dallas to Southwest Airmotive.

Under the Constitution— Mechanism and fittings for actuating and servicing the multiple wheel landing gear on the Lockheed Constitution undergoes inspection by a maintenance technician. A centralized grease system is used to lubricate 178 bearings in the landing gear. There are five of these systems throughout the plane.

Ardmore Base Trains 900 Pilots in Year

More than 900 pilots, plus a lot of flight dispatchers, mechanics, passenger agents and stewardesses, have received basic and refresher training at Ardmore, Okla., since American Airlines established its big school there a year ago.

The school now handles a flow of about 135 new students a month, some of them staying only a week, others as long as six weeks. A staff of 175 is assigned to the center. There are 13 flight instructors, five instructors for stewardess training, five for agent training, and 19 specialized ground instructors.

In addition to American Airlines personnel, the school has trained people for industrial aircraft owners and for several foreign airlines. Arrangements whereby other domestic airlines can send employees to Ardmore, rather than set up their own complex training programs, have recently been worked out and submitted to CAB for the required joint airline approval.

All new pilots regardless of previous experience (they must have 2,500 hours to get the job) must spend four weeks at Ardmore before going out on the system as probationary first officers. Sometime during their first year on the line they go back for progress checks and a week of additional instruction. First officers also go to Ardmore for preparatory instruction and flight examination for promotion to captain.

Both captains and first officers are sent to the training center for indoctrination and transition training on new types of aircraft. The DC-6 program now in progress gives ten days of ground school to all pilots, plus 10 hours of flying for captains and five hours for first officers.

While most students at the school have had considerable previous on-the-job training, passenger agents and stewardesses go to Ardmore for four weeks of indoctrination before their first public appearance with the company. Each group has its own complete training program and its own instructors. Dispatchers are trained for this type of work from among employes already familiar with the company's operations. Mechanics, whose training period varies with the specialized courses they are taking, also are experienced employes.

The Ardmore training center is a self-contained community (16 miles out from town) using the facilities of a former Army bomber training base. In addition to the airfield with four 7,200 foot runways, there are two large hangars, complete traffic control and radio facilities, 15 classrooms, and a separate building for Link trainer instruction. Dormitories, cafeteria, a medical unit and recreational facilities are located at the field.

Since its start the Ardmore school has been under the direction of William T. Arthur, wartime Colonel in charge of training for the Air Transport Command.

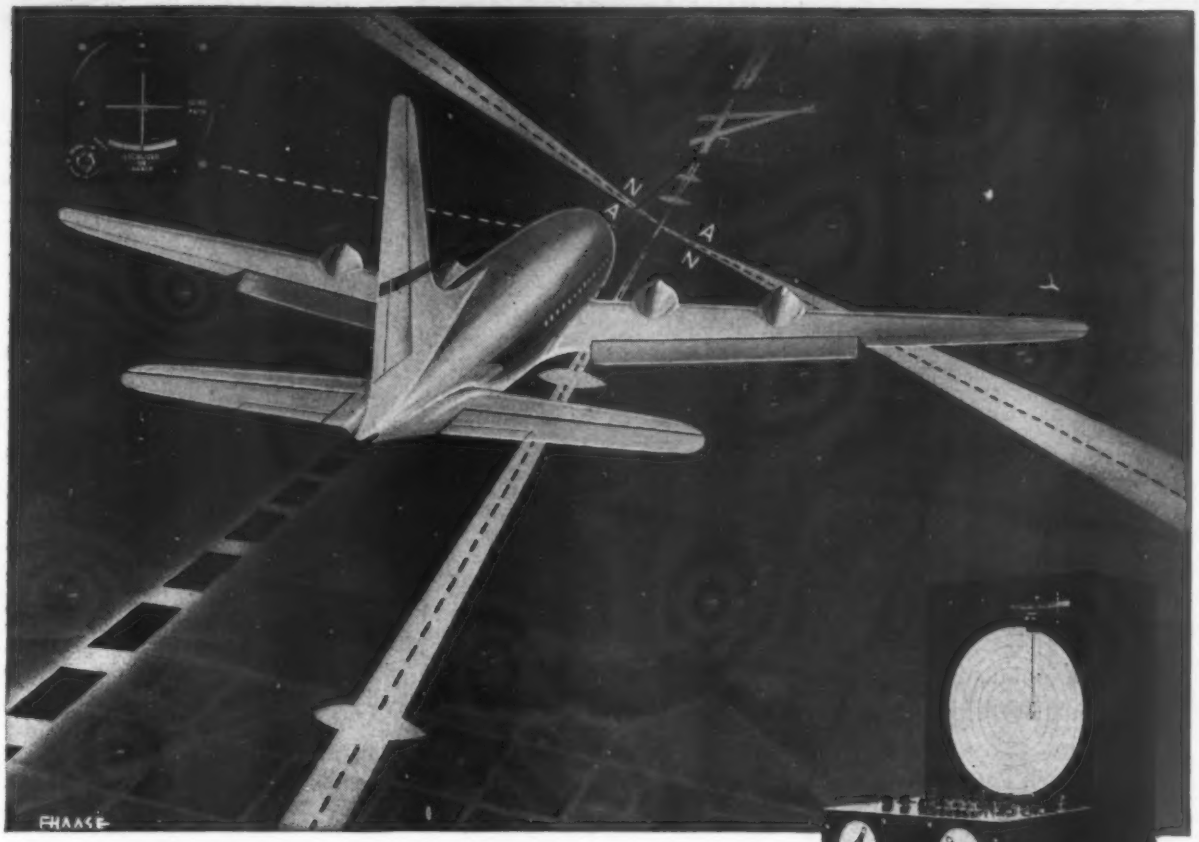
Pacific Airmotive Opens New Atlantic Division Base

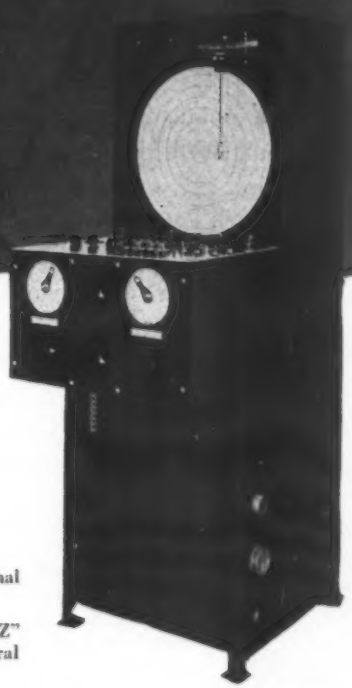
Pacific Airmotive Corp. on July 5 formally opened its new Atlantic Division headquarters at the Linden (N. J.) Airport. Several months of preparatory work, including installation of equipment and stockroom supplies, preceded the inaugural ceremony.

PAC's new division will specialize in large scale maintenance and overhaul for airlines and for executive and private aircraft owners. Equipment, supplies and trained personnel have been brought to Linden for complete service on all types of aircraft engines, accessories and instruments.

New Aero Corp. Hangar

A new hangar with more than 14,000 square feet of floor space has been completed at Candler Field, Atlanta, for use by the Aero Corporation in handling its major overhaul, conversion and modification of passenger and cargo transport planes. A radiant heating system concealed in the floor is a feature of the new hangar. The company plans to build a three-story office building for its engineering service.





Automatic Instrument landing system **now available** for use with Navigational Trainers

The Curtiss-Wright Dehmel Automatic Radio Aids Unit facilitates pilot training by its realistic simulation of various radio aids. This unit can be used with all types of navigational trainers.

Other important features ... (1) Signals are *always accurately transmitted* to the pilot. (2) *For the first time* the combination of ILS, Radio Range Signals, and the ADF can be utilized simultaneously in a Trainer without addition of extra instructor personnel.

EXCLUSIVE ADVANTAGES OF THE AUTOMATIC RADIO AIDS UNIT

AUTOMATIC...ILS (Instrument Landing System) Glide Path – Localizer – Aural and visual markers–Disabling switches–Accurate closure with air speed.

AUTOMATIC...Radio Range immediately adjustable to *any* Radio Range Pattern – Accurate build and fade – Accurate signal distribution.

AUTOMATIC...Airways fan markers and "Z" marker – Correctly keyed – visual and aural – Disabling switches.

AUTOMATIC Direction finding – Accurate time and distance checks.

AUTOMATIC...Aural-Null bearings – Pilot operated loop – Bearing width varies with distance and/or volume setting.

AUTOMATIC...VHF 2-course Range (visual only).

AUTOMATIC...Static – Immediately adjustable by Instructor.

AUTOMATIC...Recorder – Accurate record of plan view of entire flight – Excellent for *G.C.A.* Ground Control Approach.

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Curtiss-Wright Automatic Radio Aids Unit

Now being used for Pilot training by United Airlines and Eastern Airlines.

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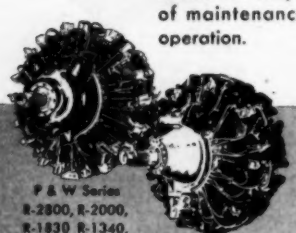

P & W Series R-2800, R-2000, R-1830 R-1340, R-985

Wright Series R-3350, GR-1820

Write or wire today for "Stock List of Parts," listing available parts. Specify whether for Wright engines, P & W engines, or both.

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Cable: AIRSOC, New York

Safety Slants

THE EXTREME flexibility of the fork lift truck has made it a real utility vehicle for handling air cargo. Whether loading or unloading aircraft, the fork lift is quite adaptable. A pallet of light packages or a piece of heavy machinery —it's all in a day's work. When properly operated by competent trained personnel, who are familiar with its capabilities and its limitations, it is a safe, useful piece of equipment. There are two things that must be remembered, however, for safe operation. The average fork lift is quite vulnerable when turning sharply at high speeds. It is an industrial vehicle, not a racing car. Secondly—do not try to carry a load on an elevated fork for any distance. This should be done only when maneuvering into final position.

At least half a dozen cases in which fork lift trucks have turned over at airports have occurred. In one instance it was found that the fork was raised, carrying the load. The operator was receiving unauthorized instruction from an over-enthusiastic colleague. In another case, also involving unauthorized operation, the driver swerved to avoid an oncoming tractor and struck a hole in the ramp pavement. Both vehicles were speeding.

All of which goes to prove that a machine can be no more safe than the man who uses it.

* * * *

Industry has found many uses for "wetting agents," which are materials added to water to increase its penetrating effect. Fire protection engineers discovered that "super-wet" water in hose streams did a better job of knocking out deep-seated fires in bales of cotton and similar materials. The hope that the use of a wetting agent in water-type extinguishers would increase their effectiveness, however, has not been realized. Tests using commonly available wetting agents have failed to show any material improvement in extinguishing ability in hand extinguishers and some disadvantages, such as a tendency to foam, were observed.

* * * *

The aircraft mechanic's trade is a highly specialized one requiring long training and a great deal of experience. When it comes to safety in using hand tools, however, the rules which apply to the licensed A & E man are no different from those which should be observed by the home handy-man, the back-alley garage mechanic or the factory production line worker. When using hand tools, such as wrenches, screwdrivers, hammers and the like, there are just three simple things to remember:

1. Select the right tool. This means the proper size and type.
2. Be sure it is in good condition. Damaged tools should be removed from service until properly reconditioned. If they cannot be repaired junk them.
3. Use it properly. For example—do not use a wrench extension to gain leverage.

Working safely is as simple as that.

Regularity Marks AAF's All-Weather Operations

The AAF's all-weather airline, which operates five round trips a week between Wilmington, Ohio and Andrews Field near Washington, D. C., has completed a year of all-instrument flying with only two cancellations—neither of them due to weather.

All flights on this "green ticket run" are operated under actual or simulated instrument conditions from takeoff to landing. Pilots remain under the hood from start to stop even in clear weather. Landings and take-offs have even been made, in a special "push-button" C-54, with the pilots sitting back in the passenger cabin.

The route is flown along a racon (radar navigational beacon) airway. The racons, spaced 100 miles apart, are triggered by signals from the airborne transmitter and send out a high frequency pulse which appears as an identifiable spot of light on the airborne radar scope.

For controlled traffic in the approach zone the All-Weather Flying Center is using CPN-18 traffic control radar. This equipment tracks all traffic within a 40-mile radius of the airport, permitting gradual letdowns under radar control and eliminating stacking and delays during periods of congestion in the approach area.

GCA is used by the all-weather airline for all final approaches and landings. Although instrument conditions are simulated on all operations, there have been numerous instances of departures and arrivals when no other traffic was moving.

Navy Awards $2,000,000 Overhaul Contracts to C-W

A contract for more than $2,000,000 for the overhaul of 36 Navy transport airplanes has been awarded the airplane division of Curtiss-Wright Corp. Reconditioning of the R5C twin-engined Curtiss Commandos will be done at the company's Columbus, O., plant.

C. C. Pearson, general manager, said this brings to more than $8,250,000 the amount of contracts awarded the airplane division in recent weeks for Navy maintenance and overhaul.

Panama City, Fla., Port Construction

Bids for construction of runways and buildings on the municipal airport at Panama City, Fla., will be opened Aug. 26, and construction is to start within five days after bid acceptance. The contract will carry a 180-day completion clause, and National Airlines, which is certificated to serve Panama City but has been delayed in doing so because of inadequate airport facilities, hopes to be able to begin service there next March.

Improved Performance Listed for DC-6

Performance figures on the DC-6 have been revised by Douglas Aircraft Co. on the basis of actual demonstration flights. New figures, representing improved performance, are as follows:

Level Flight Speed

Maximum cruise power, high blower			
Gross Weight	75,000 lbs.	84,000 lbs.	93,200 lbs.
Altitude	20,600 ft.	20,400 ft.	20,200 ft.
Speed	325 mph	315 mph	301 mph
Brake Horsepower	1,175	1,175	1,175
60% of sea level maximum continuous power, speed at 10,000 feet			
Gross Weight	75,000 lbs.	84,000 lbs.	93,200 lbs.
Speed	285 mph	279 mph	269 mph

Rate of Climb and Ceiling with Maximum Continuous Power

Gross Weight	75,000 lbs.	84,000 lbs.	93,200 lbs.
4 Engine r/c at 20,000 feet	900 F.P.M.	650 F.P.M.	445 F.P.M.
4 Engine Service Ceiling	29,000 ft.	27,000 ft.	25,000 ft.
3 Engine Service Ceiling	23,700 ft.	21,100 ft.	18,400 ft.

C.A.A. Take-Off Field Length

	Gross Weights		
	75,000	*84,000*	*93,200*
Sea Level, Without Water Injection	3430	4640	6590
Sea Level, With Water Injection	3190	4230	5510
5000 Feet, Without Water Injection	4700	6320	....
5,000 Feet, With Water Injection	4640	6200	8640

C.A.A. Landing Field Length at 75,000 Lbs. Gross Landing Weight

At Sea Level	4900 ft.
At 5000 ft.	5570 ft.

Range

Absolute range at 10,000 ft.

With 2598 Gals. Fuel	2810 miles
With 3322 Gals. Fuel	3500 miles
With 4248 Gals. Fuel	4480 miles

Engines are P & W R-2800CA-15 with take-off power of 2011 bhp each and normal rated power of 1800 bhp each.

The

FRANK AMBROSE AVIATION COMPANY

takes pleasure in announcing

the appointment of

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Convair Ventilators

Although the new Convair-Liner is pressurized and air conditioned it will be equipped with these no-draft vents for the physical or psychological com-

fort of passengers who want to use them. The Convair-designed ventilator is a push-pull tubular device with a conical element at its pressurized entrance. Particular features are that it makes no whistling sound commonly associated with aircraft ventilation, admits a controllable volume of air, and prevents misdirection of the stream of air toward other passengers.

In applying for patents, Consolidated-Vultee has taken the name "Gentlaire" for the ventilator. Exclusive manufacturing rights have been assigned to the Carbee Tool & Manufacturing Co., Los Angeles.

•

Fabric Locking Strips

Time saving installation of interior fabric in the Boeing Stratocruiser is provided with these Tenite strips. One strip is screwed or riveted to the airplane structure; fabric is wrapped around the other and snapped into place over the fixed strip. The strips remain securely locked, but can easily be separated

for removing and cleaning fabric.

The new method, which was developed by Boeing, saves time normally consumed in cutting and hemming the cloth.

Antenna Tension Units

Insulators and antenna tension units for protecting aircraft radio equipment from precipitation static, developed during the war by the Air Materiel Command, have been placed on the commercial market by Dayton Aircraft Products, Inc., 342 Xenia Ave., Dayton 10, Ohio. The units shield the antenna from corona discharge which may dangerously interfere with radio communication as a result of static accumulation during bad weather flying.

•

Hexlok Self-locking Nuts

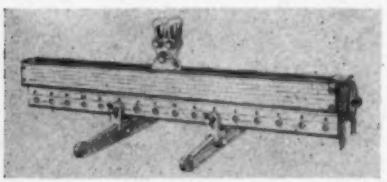
Boots Aircraft Nut Corp., Stamford, Conn., has received A-N approval of this stainless steel self-locking "Hexlok" nut. The one-piece hexagon fastener, with lancing in the crest of the nut to afford spring action and vibration-proof grip, is expected to be particularly valuable for reliability under wide temperature ranges. It will permit temperature up to 450 degrees F. A full range of sizes will be offered by the Boots organization.

•

Adjustable Engine Sling

Shown below is a new engine sling with an adjustable feature which permits it to be used with any type of engine, and, with adaptions, for lifting wings and tail surfaces. Sling arm adjustment holes in three inch increments are provided to shift sling arms to any desired length.

An endless chain with movable crane attachment permits adjustment



for perfect balance. The engine can be tipped while in the air for balance adjustment, and a double eye is provided so that the load can be transferred from one crane to another without lowering.

The sling is stressed to 5,500 pounds, with a substantial safety factor for shock loads. Designed by Aircraft Mechanics, Inc., Colorado Springs, Colo.

Plexiglas Meal Trays

Plexiglas in a variety of colors has been used by Plastics, Inc., Chestnut & Ryan Streets, St. Paul, Minn. to produce these compartmented meal

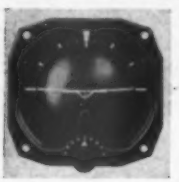
trays for airline use.

Partitions and recesses have been designed both for easy cleaning and to minimize the tendency of cups and dishes to tip and spill.

•

Non-tumbling Gyro Horizon

Unlimited indications in bank are possible with this new Sperry H-3 gyro-horizon since it requires no caging and is non-tumbling. The horizon bar of the electric-driven instrument indicates climbs or slides to plus or minus 27 degrees. The H-3 will be standard equipment on DC-6 aircraft ordered by United Air Lines, Sabena, Philippine Air Lines, KLM and Swedish Airlines.



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Engine Tachometer-Recorder

Kollsman Instrument Division has given the name "Tacholog" to this combination tachometer and engine-hour recorder. It eliminates the need for keeping an engine time log by providing a cumulative indication of engine hours based on an average cruising speed of 2,000 r.p.m. Engine hours are counted at a slower rate when the engine is idling, and faster at higher r.p.m. At other normal cruising speeds engine time can be computed by simple conversion from the 2,000 r.p.m. rate. The light-weight Tacholog is made either with clockwise or counter-clockwise operating tachometer drives.

On Nearly Every Mile of Transport Flight...

BENDIX-SCINTILLA

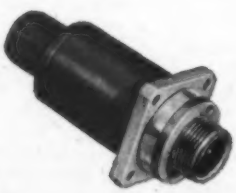
IGNITION EQUIPMENT

Typical installations of Bendix-Scintilla Low-tension Ignition Equipment—magnetos, distributors, wiring harnesses, electrical connectors and radio filters—on recent and leading engines.

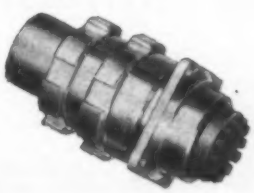
Clear-cut superiority has won for Bendix-Scintilla* Ignition Equipment a place on virtually every commercial transport in use in America. Mile after mile, air-hour after hour has proven and reproven the quality of Bendix-Scintilla Ignition products—in use on *every* airline, and specified by *every* major engine manufacturer. Bendix-Scintilla builds both high-tension and low-tension aircraft ignition systems. The newly developed low-tension systems are designed for extra efficiency, especially at higher altitudes. Write for the new brochure, fully illustrating and describing the low-tension system with its outstanding features.

*TRADE MARK

Bendix-Scintilla Radio Interference Filters are designed for insertion in aircraft ignition grounding circuits. Extremely successful in eliminating radio noise at very high frequencies.



Bendix-Scintilla is also a leader in the field of Deisel Fuel Injection Equipment, and it is in wide use on railroad, marine and stationary Diesel engines.



Bendix-Scintilla Electical Connectors are built in a wide variety of sizes and types. Precision-designed to give a pressure-tight, water-tight and radio-quiet assembly.

BENDIX SCINTILLA

SCINTILLA MAGNETO DIVISION of
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WE DON'T CLAIM TO BE THE LARGEST... NOR THE OLDEST!!

HOWEVER—OUR INVENTORY IS IN EXCESS OF $10,000,000!

We Have Been in Business For Ten Years—
Our Quality Is Guaranteed—Our Prices Reasonable.

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Beechcraft—D18S—C45—AT11 Cessna—UC 78s
Douglas—DC-3 and C-47 Ercoupes
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• ENGINES AVAILABLE •

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International and Feeder Daily Plane Utilization

Airline reports to the CAB recently filed for the month of April show hours-per-day aircraft utilization as follows (March figures, previously published, are shown for comparison):

	April	March
International		
American		
4 eng. pass. ..	8:52	9:01
cargo	8:17	9:22
American O'Seas		
4 eng. pass. ..	6:15	5:07
C & S		
4 eng. pass. ..	6:29	6:25
Eastern		
4 eng. pass. ..	9:20	4:48
National		
4 eng. pass. ..	10:11	10:27
Northwest		
4 eng. pass. ..	10:29	9:33
Pan American		
Latin American		
2 eng. pass. ..	7:46	8:48
4 eng. pass. ..	9:14	8:53
cargo	5:26	6:07
Atlantic		
4 eng. pass. ..	6:47	6:13
Pacific		
4 eng. pass. ..	8:27	8:47
Alaska		
2 eng. pass. ..	4:33	3:29
4 eng. pass. ..	5:39	....
TWA		
4 eng. pass. ..	6:14	5:38
cargo	6:02	5:43
Feeder		
Empire		
(Boeing 247-D)	5:51	6:08
Florida		
(Beechcraft D-18-C) ...	4:42	3:34
Monarch		
(DC-3)	6:05	5:09
Pioneer		
(DC-3)	6:45	7:12
Southwest		
(DC-3)	3:55	3:15
West Coast		
(DC-3)	5:11	4:26

Boeing Plans Symposium On High-Altitude Flight

Boeing Aircraft Co. is sponsoring a three-day symposium on high-altitude flight to be attended by representatives of U. S. and foreign airlines, the armed services; government, manufacturers, and technical societies. Sessions will be held at Seattle, Aug. 25-27.

The program is planned as a means of exchanging information and experience on design and operation of high-altitude, pressurized aircraft. Boeing's high-altitude research program started 10 years ago in connection with development of the Model 307 Stratoliner.

Symposium speakers will be key Boeing engineers, although AAF and airline experts are invited to present papers.

30 Hour Check

By DAVID SHAWE

ONE of the biggest suggestion awards ($693) ever made by TWA recently went to C. S. Braley of the sheet metal shop, KC overhaul base. Braley's idea has permitted TWA to increase the average overhaul time of Northwest boilers used to heat DC-3's from 431 to approximately 1,000 hours. TWA says "the discard rate of these boilers has always been high due to the fact that cracking occurred at the sides of the baffles. Braley proposed that the baffles in the boilers be welded to the solid rim of the boiler, thus reducing the possibility of the baffles breaking loose from vibration and creating a crack."

•

The AAF has made CAA an outright gift of the three GCA sets originally loaned for CAA use at New York, Washington and Chicago. This formality doesn't particularly change the status of things for airlines which may benefit (all three sets are supposed to be placed in 24 hour service this month) but it does sort of clear the air for CAA after being turned down by Congress on funds with which to buy the three sets and borrow 20 more. With funds which Congress allowed for purchase of two sets, CAA now hopes to get together with the AAF on a joint procurement deal which would save CAA money on a couple of latest-type sets.

Meanwhile, work is moving along on installation of the two micro-wave early warning radar layouts for experimental traffic control at La Guardia and Washington National. Like most jobs these days, the projects have had some unexpected interruptions but it's a fairly good guess now that La Guardia's MEW will be in operation sometime in September, and Washington's more elaborate installation a month or so later.

•

A few issues back this column said that 15 to 20% of the pilots American Airlines puts through its training program at Ardmore never complete the course. We ran the item because it was rather startling and came from an apparently reliable source. American's director of flight, W. W. Braznell, has come back with remarks to the effect that it isn't so; that there was a fairly high attrition during the changeover from wartime to peacetime training, but that current selection and training methods have cut this figure down to "a fraction of one percent." To pin the tail where it belongs on the donkey, the 15 to 20% figure was taken directly from AAL's house organ *Flagship News*.

•

We haven't seen the studies which prompted it, but Eastern Air Lines' medical department has advised all flight crews to use oxygen above 5,000 feet at night, 8,000 feet in daytime. If this came out as a proposed Civil Air Regulations requirement (and who knows but what it might the way proposals have been pouring out from the CAB), vigorous objections could be expected from pilots in the Rocky Mountain regions.

DEPENDABLE AIRBORNE COMMUNICATION— AND NAVIGATION

CAA Approved Type Certificate No. 1360.

For cross-country flight operation A.R.C. offers the R-11A Range Receiver, which with the L-10 Loop, C-16 and C-18 Control Units and A-12 Antenna provides a dependable, compact communication receiver and navigation instrument.

The loop attachment is ideal for direction finding and homing, while the receiver, with special A.R.C. noise-suppressing circuitry, gives new clarity and strength of reception over distances up to 250 miles. If no loop operation is contemplated, the R-11 Receiver is available at a lower cost.

The system described above meets basic communication and navigation needs for cross-country flying. Other A.R.C. units may be added as required, to make possible VHF Reception and Transmission, and to use the Omni-Directional and Visual-Aural Ranges now being installed by the CAA on a country-wide basis. For full information on A.R.C. units and systems, see your Authorized A.R.C. Distributor, or write direct.

SPECIFICATIONS
A.R.C. RECEIVER
TYPE R-11A

FREQUENCY RANGE
190-550 KC

TUNING ACCURACY
¼%

SENSITIVITY
2 microvolts or better throughout the band.

SELECTIVITY
Signal 30 db. down at 3 KC off resonance, and 60 db. down at 5 KC off resonance.

AUDIO OUTPUT
Over 500 milliwatts into 300 ohms load. (Two headsets.)

WEIGHT
8.8 pounds (Including Shockproof Mounting).

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A.R.C. Aircraft Radio Corporation
DEPENDABLE ELECTRONIC EQUIPMENT SINCE 1928

* * * *

Million Passengers Enter U. S. by Plane in Year

Nearly a million air passengers from the Orient, Europe, South America, neighboring Canada and Mexico landed on U. S. soil during the 12 months ended last June 30 for what undoubtedly was an all-time high.

Records of the U. S. Bureau of Customs on transactions at U. S. airports of entry, including those in Puerto Rico and Hawaii, show that 76,544 incoming aircraft were inspected and 934,799 passengers passed through customs.

There is no basis for a true comparison with the previous fiscal year's traffic, since that year's total of 68,714 aircraft and 1,013,141 passenger inspections included many Air Transport Command and other military planes, nearly all of which were eliminated from the figures for the 1946-1947 fiscal year.

It is reasonable to assume, though, that the number of passengers arriving last fiscal year via scheduled and non-scheduled airlines, chartered planes and personal aircraft was the highest ever recorded in any 12-months period.

Despite the fact that military traffic was included in the 1946 figures, customs inspections at U. S. airports for the first six months of 1947 were about 13% above the transactions for the same period last year.

There were 37,004 aircraft inspections and 454,752 passenger admittances during the first half of this year, as against 32,659 planes and 404,319 passengers entering the country in the first six months of 1946.

Record Month Cited

The record for passengers entering this country and its territories was set last September, when 92,591 incoming passengers cleared U. S. customs inspections. This followed an August record of 90,073 passengers. With more international airlines operating than ever before, with more schedules being flown and with bookings for international travel at an all-time peak, it is most likely that these figures will be exceeded this month and next, and it is possible that a volume of 100,000 entering passengers may be attained for the first time.

The customs figures do not include passengers entering the country from Puerto Rico, Hawaii and Alaska, inasmuch as residents of these territorial possessions are not required to "enter" the country and therefore do not have to pass customs inspection.

Transactions at U. S. Airports of Entry (Incl. Puerto and Hawaii) For Fiscal Year Ended June 30, 1947

Month	Aircraft Inspected	Passengers Inspected
1946		
July	6,784	83,580
Aug.	7,575	90,073
Sept.	6,674	92,591
Oct.	6,425	76,116
Nov.	6,061	73,515
Dec.	6,021	64,372
1947		
Jan.	5,712	65,466
Feb.	5,605	64,280
Mar.	6,170	80,226
Apr.	6,234	79,933
May	6,700	82,494
June	6,583	82,353
Totals	**76,544**	**934,799**

Miami and LaGuardia Field are by far the busiest airports for entry to this country, with the former in first place. These two airports handled more than 50% of the passengers and planes coming into U. S. territory from foreign countries during the last fiscal year—Miami with 19,014 aircraft and 272,740 passengers, and La Guardia with 9,660 plane inspections and 211,969 passengers.

Third place honors went to San Juan and fourth place to Honolulu, these two territorial outposts reporting more airport customs transactions than such ports as Brownsville, Tex., New Orleans, and Burlington, Vt. This is clear indication that air traffic across the Canadian and Mexican borders has yielded in importance to air travel from Europe, South America and the Orient.

Redeployment Program

W. N. Crymes, assistant commissioner of the U. S. Bureau of Customs, says that congestion at certain points will be alleviated in the near future, despite the fact that funds requested for 121 additional inspectors to handle increasing air activities were stricken from the Bureau's budget for the current fiscal year. This will be accomplished, he said, through a program of redeployment, whereby men from less busy districts will be transferred to airports where plane and passenger arrivals cannot be handled expeditiously with existing personnel. La Guardia, Los Angeles and several other airports will receive additional inspectors.

At present there are only 39 designated airports of entry, principally border airports. There are 16 other airports which hold one-year temporary designations as airports of entry, and there are 119 other fields, mostly at inland points, at which landing rights have been granted to scheduled international airlines.

American Combines Cargo, Passenger Sales Posts

The positions of regional director of passenger sales and regional director of cargo have been combined by American Airlines, and a new post, that of assistant regional director-sales, has been created.

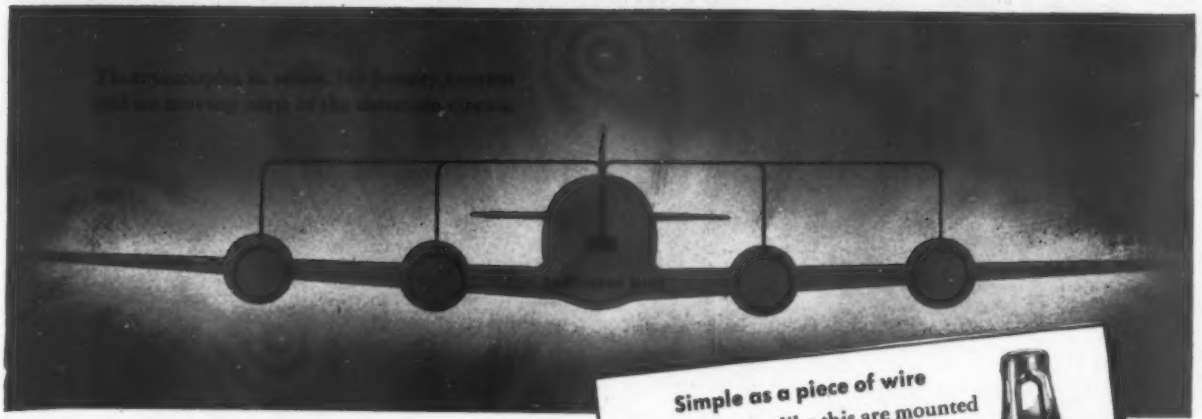
Former regional directors of passengers sales appointed to the new combination posts are: A. B. Newcombe, New England region; Clark Ferguson, central; Elmo Coon, southern; Frank Burg, western. Former director of cargo sales, Walter H. Johnson, got the consolidated post in the eastern region. Under the consolidations, full responsibility for all sales activities was assigned to the office of the regional vice president.

C & S Tests Use of Movies On Havana Service

Experimenting with showing movies in flight on its route from Memphis to New Orleans and Havana, Chicago and Southern Air Lines plans to include motion pictures on some regular flights if passenger reaction to the experimental showings is favorable enough. The company is working with Earl Pate, mid-south representative and engineer for the Bell and Howell Co., builders of specially designed airborne projectors.

Passengers Entering Customs at 10 Leading Airports First Six Months of 1947

Airport of Entry	Jan.	Feb.	Mar.	Apr.	May	June
Miami	22,922	23,781	26,009	23,065	19,717	19,609
La Guardia, (N. Y.)	13,919	12,766	16,334	19,121	20,412	23,996
San Juan (P. R.)	3,849	4,006	4,754	4,389	4,083	3,877
Honolulu (T. H.)	1,104	1,121	2,146	1,246	2,737	3,182
Burlington, Vt.	1,515	680	1,033	960	1,030	1,039
Los Angeles	2,052	1,777	2,960	2,215	2,820	2,825
Seattle	1,103	1,162	1,916	2,139	2,758	2,846
San Antonio	1,988	2,420	2,974	3,101	2,468	2,228
Brownsville	1,312	1,021	1,349	1,048	1,114	1,003
New Orleans	1,458	1,445	1,825	1,512	1,706	1,665



Simple as a piece of wire

Thermocouples like this are mounted in potential fire zones. Each is just a piece of wire connected in series. Only a fire can make it send an alarm signal.

Only EDISON makes the thermocouple type.

How EDISON thermocouple fire detection meets ideal requirements

[ITEM VIII-A-1 OF REPORT NO. 2 *of Aircraft Industries Association ARC Subcommittee on Aircraft Fire Detection, Airworthiness Project No. 7, dated May 27, 1946, lists requirements for the ideal fire detector. See how the performance of the Edison system compares with these ideal requirements.*]

The IDEAL Detector (From ARC Report)

"**a.** Should be ruggedly constructed so as to resist exposure to gasoline, oil, dirt, water, vibration, fatigue, salt air, and handling.

"**b.** Detector circuit should require no current until the actual alarm has signalled, unless a supervisory system is used.

"**c.** It should fail safe, i.e., in case of circuit failure it becomes inoperative rather than give a false alarm.

"**d.** A test button should be provided to check the entire system.

"**e.** There should be no moving parts in the circuit.

"**f.** The detector should be able to withstand more than one fire without having to be replaced or calibrated.

"**g.** The detector should indicate when the fire is extinguished."

The EDISON Detector

a. It is RUGGED and AMAZINGLY SIMPLE . . . just a piece of wire that is mounted in each potential fire zone . . . that's all there is to a thermocouple.

b. Thermocouple detectors require no battery current. They generate their own current, and they send a "FIRE" signal *only when there is a fire.*

c. Should a thermocouple circuit fail, it could send no signal . . . couldn't give a false alarm.

d. The push of a button checks the entire Edison system.

e. There are no moving parts of the system in the fire zones. The only moving parts are the relay contacts located in the signal system.

f. Thermocouple detector will withstand many fires without need for replacement or calibration.

g. A thermocouple detector signals "FIRE OUT" and is again ready to signal "FIRE" after conditions return to normal.

Write for descriptive bulletin

THOMAS A. EDISON, INCORPORATED
INSTRUMENT DIVISION
140 Lakeside Ave., West Orange, N. J.

EDISON

NATIONAL, PAA and PANAGRA
OFFER DIRECT
DC-6 SERVICE TO
MIAMI
PANAMA
BUENOS AIRES

Now for the first time you can get the extra speed, comfort and luxury of the great new Douglas DC-6 on the straight route from New York all the way down to Buenos Aires.

National's new daily Buccaneer "400" flights from New York to Miami in only 4 hours make direct connections with Panagra DC-6's for Panama, Lima, Santiago and Buenos Aires. The coordination of these DC-6 schedules over 10,000 miles of North and South American routes marks another important advance in international air transportation.

Ask your travel agent for information and reservations

Air Travel Reaches 52% of Pullman

The nation's scheduled domestic airlines reported more than 50% as many revenue passenger miles as did the Pullman Company for the month of May, which represented a new high in air travel's comparative position with Pullman. Airline reports to CAB and rail reports to ICC show that for the first five months of 1947 the airlines operated 14.2% as many revenue passenger miles as all the nation's Class 1 steam railroads (exclusive of commutation travel) and 39.9% as many revenue passenger miles as the Pullman service. The ratio of air to Pullman travel has climbed steadily and sharply since January. The 1947 trend is shown in the table below:

Revenue Passenger Miles

Month	Domestic Air* (in millions)	Class I Steam Rwys.** (in millions)	Air as % of Rail	Pullman (in millions)	Air as % of Pullman
January	386	3,607	10.5%	1,378	28.0%
February	372	3,000	12.4%	1,161	32.0%
March	491	3,529	13.9%	1,180	41.6%
April	523	2,999	17.5%	1,064	49.2%
May	560	3,241	17.3%	1,061	52.8%

* Includes 18 domestic air carriers.
** Excludes commutation traffic.

Excess Baggage Precedes Air Travelers to Europe

An arrangement enabling passengers to avoid the heavier assessments for excess baggage when traveling to Europe by air has been devised by American Airlines through an agreement with Sutherland International Dispatch. The latter, which now has agents assigned to principal AA offices, has the excess baggage picked up at the passenger's home and delivered to the overseas destination by boat, prior to the arrival of the plane.

This simplified service makes it possible to fly to Europe and find your excess baggage awaiting you on arrival. A flat fee for this service includes pick-up from any point in this country.

Capital, TWA Carry Gridmen

The Baltimore Colts, All-America Conference professional football team, has signed a contract with Capital Airlines to provide air transportation for the squad to and from all its out-of-town games this fall. The Brooklyn Dodgers, another football team in the same league, signed a similar contract with TWA to fly the team nearly 10,000 miles in its conference travels this fall.

Floyd Bennett to Help Soon

It should be possible to have Floyd Bennett Field, Brooklyn, ready to absorb overflow traffic from La Guardia Field by the end of August or mid-September, according to a spokesman for the Port of New York Authority. The Authority has occupied the field under terms of a lease between the N. Y. Board of Estimate and the Federal government.

New Offices

Western Air Lines last month moved its general and executive offices, including general traffic office, accounting and purchasing departments, from 135 South Doheny Drive, Beverly Hills, to Los Angeles Airport, 6060 Avion Drive.

California Eastern Airways, coast-to-coast air freight carrier, opened office in Cleveland Aug. 1 in connection with the inauguration of daily service connecting that city with New York, Detroit, Chicago, Denver, Los Angeles and the San Francisco Bay area. Alfred J. Bovier, recently with the Contract Air Cargo Division of American Airlines, is in charge of the new office, which is located in the Arcade Building, 401 Euclid Avenue.

Philippine Air Lines' international division has opened a Southern California district traffic and sales office at 354 South Spring Street, Los Angeles 13, with Charles T. Willett as district manager.

British Overseas Airways, Scandinavian Airlines System and **Air France** are establishing West Coast traffic offices in Los Angeles. BOAC already has opened its office with G. Wallis Bone as West Coast sales manager. SAS has named Peter Tornquist as its West Coast representative, but he has not yet reported in Los Angeles. Air France has not yet appointed its representative. KLM, the Dutch line, was first of the European lines to open a Los Angeles office, having done so last fall.

Pacific Overseas Airlines has opened new traffic offices in San Francisco and the Pacific Northwest. Paul Ochsner, formerly with United Air Lines' cargo department, is manager for the Seattle-Portland office, and Ted Harris, formerly with American for 14 years, heads up the San Francisco office. Elmer Basey, formerly traffic representative for United and TWA, has joined POA's sales staff.

New Services

Mid-Continent is offering a "Budge-tour" vacation-on-credit trip from Minneapolis-St. Paul to California, flying MCA to Kansas City and connecting there with TWA for Los Angeles. Tariff is $223.58 cash or $16.03 per month over 15 months, $19.75 over 12 months, and $38.38 over six months. Now available only to Twin Cities residents, the plan, if successful, may be extended later to other points on the MCA system.

Eastern Air Lines now offers four-hour non-stop service from New York to New Orleans, using new 60-passenger Constellations.

Colonial Airlines gave Washington its first certificated air service to Bermuda on Aug. 1, inaugurating two departures a week, on Fridays and Sundays. Daily flights from New York to the British colony were started on the same date, with an added flight on Fridays.

West Coast Airlines opened the southern section of its route on July 17, providing service from Portland to Medford, with intermediate stops at McMinnville, Albany-Corvalis, Eugene and Coos Bay-North Bend. Connection is made at Medford with Southwest Airways flights out of San Francisco, the two lines together affording a complete Pacific Coast feederline service between Los Angeles and Seattle.

American Airlines made its initial scheduled entry into San Francisco on Monday, July 7, when it inaugurated a daily coast-to-coast DC-6 service from Washington, via Tulsa. On the same day, the airline inaugurated DC-4 service from Fort Worth and Dallas to San Francisco, via El Paso and Phoenix. Elapsed time on the Washington-San Francisco run is about 12 hours 20 minutes westbound, 11 hours 25 minutes eastbound.

Resort Airlines is operating a daily nonstop air service between New York and Saranac Lake in the Adirondacks, permitting businessmen to attend to their affairs in the city and commute regularly to the lake. The 26-passenger DC-3 makes the run in 90 minutes. Departures are at 5 p.m. from La Guardia Field, and at 8 a.m. from Saranac Lake.

International

Pan Am-Panagra joined in inaugurating through-flight service with DC-6's over their combined 5,150-mile route between Miami and Buenos Aires on July 17. The new joint service, made possible by a recent CAB decision permitting Pan Am to charter Panagra planes with Panagra crews for the run over Pan Am's present Miami-Balboa route, reduces the scheduled commercial flying time between Miami and Buenos Aires by more than eight hours.

Trans-Canada Air Lines now operates four round trips daily between Toronto and the Pacific Coast via Sault Ste. Marie (Michigan), Fort William and Port Arthur over its new "short-cut" Great Lakes Airway, discontinuing service on a more northerly route and saving one hour transcontinental flying time. The airline has also inaugurated service to Saskatoon on the Winnipeg-Edmonton route.

What's so "alike" about these businesses?

To ship equipment and films the fastest way, the motion picture industry relies on Air Express. In this business, *speed pays.*

With demand for all kinds of food products high, producers get equipment items and supplies the fastest way—use Air Express to keep production rolling. *Speed pays.*

Dies, machine tools and industrial equipment are vitally needed abroad. Exporters ship by International Air Express regularly—actually save *weeks* in delivery. *Speed pays.*

Speed pays in your business, too!

Count on Air Express for the speed of delivery that's so essential to *your* business. Air Express puts any U. S. point a few short hours away. And faster planes, on more frequent schedules, make Air Express a better value than ever. Shipments of most any size and weight are inexpensive. For example—17 lbs. goes 1300 miles for only $6.78! Use Air Express regularly.

- Low rates—special pick-up and delivery in principal U.S. towns and cities at no extra cost. • Moves on all flights of all Scheduled Airlines.
- Air-rail between 22,000 off-airline offices.
- Direct air service to and from scores of foreign countries.

AIR EXPRESS

GETS THERE FIRST

Write today for Schedule of Domestic and International Rates. Address Air Express Division, Railway Express Agency, 230 Park Ave., New York 17. Or ask at any Airline or Railway Express office. Air Express Division, Railway Express Agency, representing the Airlines of the United States.

1927—20TH YEAR OF GETTING THERE FIRST!—1947

Pan Am Reservations Gives Instant Service

Pan American Airways has adopted the "Sell and Report" reservations system on its 70,000-mile system and claims to be able, through the use of radio and a 12,000-mile teletype network in this country, to obtain virtually instant information on seat space on any flight anywhere in the PAA system.

Pan American officials say they are the first international airline to adopt this reservations system, and also the first to provide this service to incoming passengers who continue their flight on a domestic airline.

Radio Reports Sale

A traveler in Lima, for example, can buy a ticket there all the way to New York or Chicago, via Pan American to Miami and by any of several domestic lines operating northward out of Miami. The sale in Lima is reported by radio to Miami and PAA's traffic reservation office notifies the respective domestic airline.

Under the "Sell and Report" plan, passenger space on all flights is controlled at terminal points where the flights originate. When an agent sells a ticket for a given flight, he immediately flashes the information to other stations, where the reservation is recorded on master charts. When 47 of the 52 seats are sold, a warning is dispatched to all ticket offices and the remaining five seats are sold subject to confirmation.

PAA Traffic Nerve Center—Control room of Pan American Airways traffic reservations department at Miami, Fla., (Coconut Grove) is the nerve center of the new "Sell and Report" system that eliminates ticketing delays. Sales are flashed to the control room by radio, telephone, and by PAA's own 12,000-mile teletypewriter circuit. Cards containing the information are shunted down the long table by an endless conveyor belt to clerks controlling different flights. Chart in the background shows when each flight is sold out and a warning is then flashed back to the sales office.

Add 'em up . . . .
QUALITY plus
ACCURACY plus
DEPENDABILITY
equals BETTER TICKETS
No wonder that tickets by GENERAL are becoming famous from coast to coast! GENERAL makes transportation tickets and nothing else. They're licensed, bonded . . . and reliable!
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NAL 'Reservamatic' Plan Features Speed

After months of preparatory work by a staff under the direction of Willis Baker, system reservations manager, National Airlines was scheduled today to inaugurate operation of a new "Reservamatic" system featuring high-speed communications. It is designed to enable National agents to give a prompt confirmation of space for the flight and hour requested, or, if the flight is sold out, to offer positive space on an alternative flight.

In addition, the "Reservamatic" system, it is claimed, permits instantaneous confirmation of requests for space on any flight, on any date, between any points on the NAL system, regardless of which of the 29 stations receives the request.

Key to System

An automatic teletype system affording quick direct communication between all of National's offices in 10 states and Cuba, is the key to success of the new system, which is coordinated through a central communications center and a central reservations control office.

Flight charts in every NAL station will keep agents informed to the minute as to what space is open on each flight, and they will be able to sell seats until a teletype flash informs all stations simultaneously that the flight is sold out. Similar information posts them immediately when a portion of a flight is sold out, so they may continue sales on other portions and other flights.

Summary of U. S. Domestic Airline Traffic for May

Airlines	Revenue Passengers	Revenue Passenger Miles	Available Seat Miles	Passenger Load Factor	Mail Ton-Miles	Express Ton-Miles	Freight Ton-Miles	Total Ton-Miles Rev. Traffic	Available Ton-Miles Flown	% Available Ton-Miles Used	Revenue Plane-Miles	Scheduled Miles	% Scheduled Miles Completed
All American	. . . .	. . . .	. . . .	. . .	3,681	2,910	. . . .	6,591	28,437	23.2%	159,393	164,484	96.9%
American	251,918	129,954,000	162,936,000	79.8%	588,809	380,892	622,141	14,131,870	20,774,360	68.0%	5,046,303	5,033,337	95.7%
Braniff	35,241	17,597,000	27,153,000	64.8%	57,528	63,617	24,227	1,830,999	2,872,867	63.7%	959,194	961,359	99.2%
Capital-PCA	119,466	32,067,000	53,692,000	59.7%	47,944	193,671	134,818	3,277,599	6,852,970	47.8%	1,391,136	1,461,908	94.6%
Caribbean	5,779	352,000	810,000	43.5%	393	. . . .	680	89,381	77,031	38.1%	33,712	33,845	99.7%
C & S	28,617	10,742,000	16,559,000	64.9%	32,162	53,812	28,709	1,198,044	2,358,836	50.8%	626,431	632,304	98.8%
Colonial	11,751	3,347,000	6,193,000	54.0%	5,651	4,247	. . . .	347,216	821,728	55.9%	314,189	326,031	94.1%
Continental	15,903	5,158,000	8,840,000	58.4%	12,377	7,199	7,660	546,834	1,007,385	54.3%	428,857	435,674	98.4%
Delta	45,333	17,655,000	27,313,000	64.6%	61,226	56,424	50,425	1,897,076	3,768,147	50.4%	985,016	989,625	99.5%
Eastern	153,733	74,794,000	107,165,000	69.8%	279,084	323,521	137,014	8,331,651	16,280,783	51.2%	3,695,343	3,747,189	98.6%
Hawaiian	21,444	3,007,000	3,913,000	76.9%	3,001	7,893	59,909	327,492	946,931	39.9%	198,492	168,228	97.9%
Inland	7,700	2,840,000	4,148,000	68.5%	10,138	4,311	3,089	303,524	442,728	68.6%	211,388	213,136	99.2%
MCA	24,076	7,435,000	11,481,000	64.8%	19,981	10,998	5,978	785,529	1,220,812	64.3%	574,778	570,803	99.9%
National	30,699	14,696,000	26,823,000	54.8%	50,732	41,259	17,201	1,611,307	4,013,186	40.2%	921,374	928,741	98.2%
Northeast	26,572	4,983,000	9,178,000	54.3%	3,679	6,708	1,588	430,281	929,617	46.3%	284,894	392,714	70.8%
Northwest	64,697	34,360,000	47,899,000	71.7%	187,336	137,667	57,600	3,711,190	6,123,063	60.6%	1,362,403	1,397,740	97.4%
TWA	93,456	74,380,000	99,860,000	74.5%	602,014	408,537	331,328	8,504,324	12,473,973	68.2%	4,116,568	3,960,401	97.7%
United	179,348	109,677,000	133,959,000	81.9%	751,013	585,246	634,769	12,441,749	19,370,572	64.2%	5,031,879	5,216,573	95.3%
Western	42,852	16,904,000	24,632,000	68.6%	71,422	40,082	39,114	1,853,725	2,835,428	65.4%	644,671	635,024	99.2%
TOTALS	1,158,585	559,948,000	772,554,000	72.4%	2,788,167	2,328,594	2,158,250	61,566,339	102,592,854	60.0%	27,385,951	27,671,116	96.6%

U. S. International Airline Traffic for May

Airlines	Revenue Passengers	Revenue Passenger Miles	Available Seat Miles	Passenger Load Factor	U. S. Mail Ton-Miles	Foreign Mail Ton-Miles	Express Ton-Miles	Freight Ton-Miles	Total Ton-Miles Rev. Traffic	Available Ton-Miles Flown	% Available Ton-Miles Used	Revenue Plane-Miles	Scheduled Miles	% Scheduled Miles Completed
American	4,334	4,317,000	8,659,000	49.9%	7,372	747	. . . .	138,972	600,132	1,233,768	48.6%	234,165	228,664	100.0%
Amer. O'Seas	6,294	18,491,000	20,381,000	90.7%	144,470	27,521	166,027	. . . .	2,340,761	3,138,728	74.6%	646,290	643,548	96.6%
C & S	512	351,000	1,850,000	18.9%	141	. . . .	92	11,640	48,208	202,993	23.8%	41,100	42,470	96.8%
Eastern	1,400	1,401,000	3,098,000	45.2%	2,484	. . . .	. . . .	12,209	167,453	475,550	35.2%	62,178	62,178	100.0%
National	2,067	648,000	1,622,000	39.9%	546	. . . .	6,140	. . . .	73,987	237,140	31.2%	35,258	35,836	98.4%
Northwest	1,474	2,396,000	6,020,000	39.8%	32,759	. . . .	5,828	21,077	300,859	743,790	40.5%	159,012	159,012	100.0%
Pan American:														
Latin Amer	55,076	49,895,000	93,883,000	53.2%	217,500	85,746	1,368,015	. . . .	6,779,415	13,247,757	51.2%	2,547,327	2,595,525	98.1%
Atlantic	11,858	30,620,000	39,224,000	78.1%	126,452	58,689	300,806	. . . .	3,729,010	6,001,448	62.1%	1,067,997	968,327	99.5%
Pacific	5,454	16,256,000	21,427,000	75.9%	256,328	11,846	226,816	. . . .	2,046,908	2,832,940	72.3%	764,885	727,163	100.5%
Alaska	3,757	3,736,000	8,300,000	45.0%	25,517	. . . .	34,761	. . . .	445,591	1,263,146	35.3%	210,655	191,449	94.0%
TWA	5,767	19,313,000	23,237,000	83.1%	238,618	59,435	259,957	. . . .	2,755,897	3,897,337	70.7%	715,846	703,054	98.3%
United	2,030	4,872,000	5,525,000	88.2%	34,571	. . . .	5,650	. . . .	527,563	630,119	83.7%	148,800	148,800	100.0%
TOTALS	100,023	152,296,000	233,226,000	65.3%	1,086,758	243,984	2,374,092	183,897	19,817,784	33,904,716	58.4%	6,633,513	6,506,026	98.5%

NOTE: Data in above tabulations were compiled by American Aviation Publications from monthly reports filed by the airlines with the Civil Aeronautics Board. Figures for American Airlines include that carrier's service to Mexico but not to Canada; for C & S to Havana; for Eastern to Puerto Rico; National to Havana; Northwest to Alaska, and United to Honolulu. Operations of U.S. carriers into Canada are included in domestic reports to CAB in accordance with CAB filing procedures.

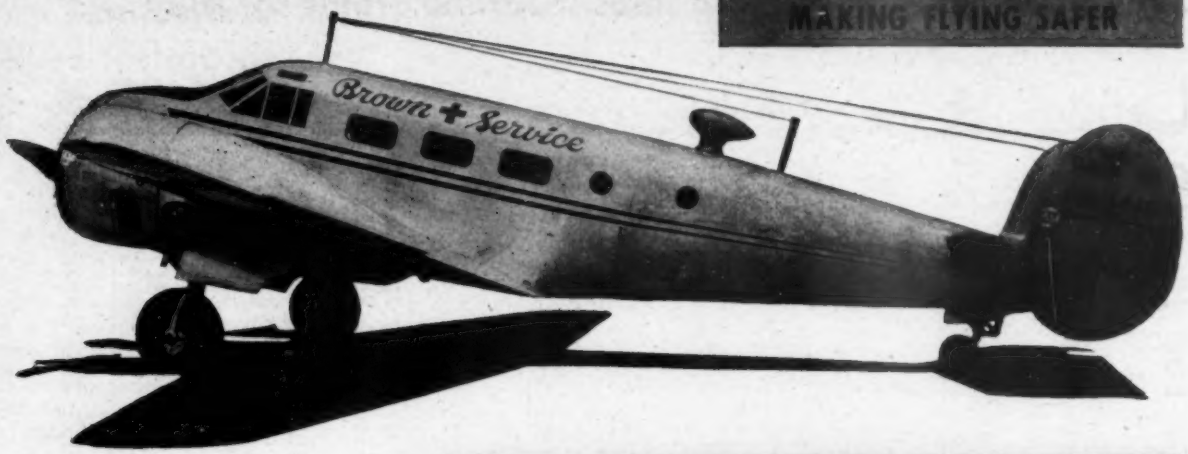
U. S. International Airline Revenues-Expenses for May

Airlines	Total Operating Revenues	Passenger Revenues	U. S. Mail Revenues	Foreign Mail Revenues	Express Revenues	Freight Revenues	Excess Baggage Revenues	Non-Scheduled Transport Rev.	Total Operating Expenses	Aircraft Operating Expenses	Ground & Indirect Expenses	Net Operating Income
American	$ 290,102	$ 216,916	$ 3,317	$ 2,484	$	$ 47,155	$ 5,324	$	$ 336,292	$ 173,744	$ 162,548	$ -46,190
Amer. O'Seas	2,068,386	1,676,281	120,804	76,839	111,006	. . . .	23,965	. . . .	1,809,769	838,003	971,766	258,617
C & S	69,968	25,513	39,045	. . . .	. . . .	4,693	716	. . . .	77,064	34,873	42,191	-7,096
Eastern	77,603	70,372	1,118	. . . .	. . . .	5,040	1,063	. . . .	95,257	49,805	45,452	-17,654
National	48,284	40,827	328	. . . .	4,810	. . .	2,319	. . . .	65,804	28,534	45,270	-17,519
Northwest	304,404	185,684	27,845	. . . .	2,914	6,211	1,343	80,408	374,406	179,140	195,266	-70,001
Pan American												
Latin Amer.	4,593,431	3,275,716	189,375*	178,017	645,797	. . . .	150,883	55,492	5,105,477	1,989,179	3,116,298	-512,046
Atlantic	3,041,501	2,864,593	-156,749*	138,884	166,261	. . . .	44,081	13,338	2,645,372	1,243,731	1,401,641	396,129
Pacific	2,154,170	1,269,615	598,374*	18,000	190,523	. . . .	13,583	7,145	1,749,730	828,772	920,958	404,440
Alaska	622,660	247,855	347,540	. . . .	28,090	. . . .	3,245	. . . .	549,886	270,325	279,561	72,774
TWA	2,475,473	1,738,596	178,988	170,797	204,651	. . . .	67,933	86,265	2,455,891	913,345	1,542,546	19,581
United	284,386	264,532	15,637	. . . .	3,320	. . . .	2,971	. . . .	217,616	106,865	110,751	68,770
TOTALS	16,032,368	11,876,500	1,365,622	585,021	1,357,372	63,099	317,026	242,648	15,482,564	6,648,316	8,834,248	549,805
					Revisions for Northwest Airlines							
January	174,250	147,140	20,384	. . . .	1,854	3,551	1,322	. . . .	250,611	133,053	117,558	-76,361
February	149,775	116,324	26,844	. . . .	2,358	3,184	1,065	. . . .	217,790	115,607	102,183	-67,976
April	321,519	170,851	28,702	. . . .	3,305	3,890	1,360	113,411	389,537	190,404	199,133	-66,018

* Estimated

NOTE: Data in above tabulations were compiled by American Aviation Publications from monthly reports filed by the airlines with the Civil Aeronautics Board. Figures for American Airlines include that carrier's service to Mexico but not to Canada; for C & S to Havana; for Eastern to Puerto Rico; National to Havana; Northwest to Alaska; and United to Honolulu. Operations of U.S. carriers into Canada are included in domestic reports to CAB, in accordance with CAB filing procedures.

MAKING FLYING SAFER



BROWN AMBULANCE SERVICE installs IRVIN Chair Chutes

Illustration shows Irvin Custom-Built *Chair* Chutes installed in an Ercoupe. *Chair* Chutes are fitted into the back of the seat . . . combine beauty, convenience and comfort with tested safety. You wear the chute only in an emergency. Write for descriptive circular now.

● To provide a full measure of protection for doctors, nurses, patients and other personnel, the Brown Ambulance Service of Birmingham, Alabama has equipped its Beechcraft Transport with Irvin Custom-Built *Chair* Chutes. The decision to equip planes with this new type of air chute, just as all ocean-going ships are equipped with life preservers, is being made by more and more companies and individuals every day . . . because the Irvin Custom-Built *Chair* Chute is a practical form of protection that makes flying many times safer.

Irvin Custom-Built *Chair* Chutes are available for every type of plane . . . large or small. They cost little . . . are easily and quickly installed. For greater flying safety today, write for particulars about Irvin Custom-Built *Chair* Chutes for the plane you own or plan to buy.

There are now over 35,000 registered members of the Caterpillar Club. Should you qualify, please write us.

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The Life Preserver of the Air

IRVING AIR CHUTE CO., INC.
1673 JEFFERSON AVENUE, BUFFALO 8, NEW YORK
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FEEL SAFER...BE SAFER...
with Irvin Custom-Built Chair Chutes

* * * *

Landing Fees for Airlines Still Show Wide Variations

Landing fees charged the scheduled airlines by municipalities range from as low as $60 to as high as $230 per month for the first daily scheduled landing, a recent AMERICAN AVIATION survey indicated.

Although the formula used in arriving at landing fees varied from city to city, with some charging a graduated monthly fee based solely on the number of schedules operated by a carrier, others basing their fees on weight, and still others using a combination of weight and schedule frequencies, the fee most widely charged is $100 per month for the first daily schedule.

Here are some typical charges:

St. Louis (Lambert Field)—first schedule, $100 per month; second through sixth, $50 each; seventh schedule and all over, $25 each per month.

Jacksonville—$1.50 per month per 1,000 pounds up to 30,000 pounds for each regular daily schedule; $1.25 per 1,000 pounds from 30,000 to 60,000, and $1.00 per 1,000 pounds for weight in excess of 60,000 pounds.

Des Moines—first three schedules, $100 each per month; next three, $75 each per month; all additional, $50 each per month.

Birmingham—first schedule, $100 per month; second, $50; third and over $25 each per month.

San Francisco—$6.25 per month per daily schedule for each 1,000 pounds or fraction thereof per schedule of disposable load.

Fee Varies With Weight

Baltimore—$100 per month per schedule for aircraft of 35,000 to 49,999 pounds maximum allowable gross weight; $75 for 27,000 to 34,999 pounds; $60 for 20,000 to 26,999 pounds; $45 for 15,000 to 19,999 pounds; $30 for 10,000 to 14,999 pounds; $18 for 5,000 to 9,999 pounds, and $9 for planes of less than 5,000 pounds.

Indianapolis (Weir Cook Municipal)—first two schedules, $100 each per month; next two, $75 each; next six $50 each; all above 10 schedules, $25 each per month.

Kansas City—first schedule, $100 per month; second, $50 per month; third and above, $25 each per month. Plus $1.00 extra for each 1,000 pounds above 50,000 Contracts also call for an adjustment when the expiration date on the airport lease agreement comes up.

Houston—(four-engined planes) first schedule, $230 per month; second, $180; third, $167.50; fourth and fifth, $155; all others, $140 each per month; (twin-engine transports of 10 to 44-passenger capacity) first schedule, $125 per month; second, $75; third, $62.50; fourth and fifth, $50 each; all others, $35 each; (eight to 10-passenger capacity) first schedule, $75; second $50; all others, $40.

Spokane—first schedule, $60 per month; second, $50; third and fourth, $40 each; fifth through eighth, $30 each; ninth through 13th, $25 each; all additional, $20 each per month.

Muskegon—first and second schedules, $75 each per month; all others, $25 per month.

Oakland—fees for first 60 landings per month range from $1.25 per landing for weights from 5,000 to 7,500 pounds to $3.00 for 13,000 to 17,000 pounds, $5.00 for 21,000 to 26,000 pounds, $6.50 for 50,000 to 70,000 pounds, and $7.00 for 70,000 to 90,000 pounds. Fees for the next 30 landings per month run from 25c to $1.00 less than those for the first 60, and fees for all over 90 landings per month are lower still.

Dallas—first five schedules, $100 each per month; sixth through 10th, $75 each; 11th through 15th, $50 each; 16th through 20th, $40 each; all additional, $25 each per month. These fees apply to aircraft with an approved maximum landing weight of 25,000 pounds or less, and there is an additional charge of $1.00 per month for each 1,000 pounds in excess of that weight. As an alternative to the above fees, the airlines may pay a fee of 8 cents per 1,000 pounds per landing, based on the manufacturer's gross weight or the restricted weight of the plane.

MCA Shows Slim Profit for June

Mid-Continent Airlines showed a net profit for June of $6,914, after provision for income taxes, as compared to a net profit of $34,853 after taxes in June, 1946. Operating revenues for this June were $510,848, an increase of 5.64% over the previous month and 16.27% over June of last year.

The company attributed the reduction in net profit primarily to loss from operation of the partially developed Tulsa-Houston route, which was opened last February, and to increased labor and material costs. Per-mile operating costs declined, however, due to increased miles operated.

A drop in the passenger load factor from 75.64% in June, 1946, to 61.19% in June of this year was attributed to a 40% increase in miles operated, to a lack of time for extensive development of traffic on the Tulsa-Houston route, and an unseasonable decline in passenger business.

$200,000 June Deficit Reported by Capital

A June net loss of $200,000 after depreciation and non-operating charges of $266,000, as compared to a net profit of $42,000 in May, was reported by Capital Airlines. C. Bedell Monro, president, attributed the June loss to lower passenger load factors and a drop of $240,000 in passenger revenues from May.

Even so, Monro pointed out, Capital's cash position since last January has improved substantially. On January 31, the company had cash and securities of $2,199,000 as compared to current trade accounts payable (short term liabilities aside from wages, salaries, taxes, etc.) of $2,167,000. On June 30, the cash and securities had increased to $2,640,000, or a gain of $441,000, despite a reduction of $1,132,000 in current trade accounts payable to a balance of $1,035,000.

Bank Loan Extended

Capital Airlines' $4,000,000 bank loan, originally due last May 1, at which time it was extended for three months until Aug. 1, has now been extended for another three-months period, the new due date being Nov. 1. Participating in the loan are Chase National Bank of New York City, Harris Trust and Savings Bank of Chicago, Mellon National Bank and Trust Company of Pittsburgh, the National Bank of Detroit, and the Marine Trust Company of Buffalo.

Tax Carryback Reduces Douglas 1st Half Loss

An operating loss of $6,712,307 before Federal income-tax carryback and a net loss of $752,307 after tax carryback was incurred by Douglas Aircraft Co. for the six months ended May 31—first half of the company's fiscal year. The loss was on sales and billings totaling $54,534,370.

This loss compared with a net income of $2,610,261 on sales and billings of $57,146,830 during the comparable period of the 1946 fiscal year. The net loss amounted to $1.25 per share of capital stock.

Douglas' mid-year backlog of orders amounted to $165,039,000, as compared with $200,538,000 at the end of the first quarter. New orders, less cancellations, totaled $3,054,000 during the second quarter, while shipments and deliveries amounted to $38,553,000.

Investments in commercial work in progress, principally the DC-6, and in accounts receivable declined from earlier peaks, but remained in excess of $54,000,000 at the end of May.

Despite increased deliveries of planes, it is expected that the cumulative losses incurred during the first half of the fiscal year will be somewhat increased during the last six months.

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New Features Offered in the 118-132 Mc. Band by the Wilcox Type 361A Communications System

• UNIT CONSTRUCTION FOR EASE IN HANDLING

The 50 watt transmitter, high sensitivity receiver, and compact power supply are each contained in a separate ½ ATR Chassis. Any unit may be readily removed from the common mount for inspection. Individual units are light in weight, small in size, and easily handled.

• 70 CHANNELS COVER PRESENT AND FUTURE NEEDS

Both the receiver and transmitter contain a frequency selector mechanism with provisions for 70 small hermetically sealed crystals. Selection of the crystals automatically adjusts the radio frequency amplifiers and harmonic generator circuits to operate at their maximum performance for each selected frequency. Either simplex or cross-band operation may be obtained.

• SIMPLICITY OF CIRCUIT DESIGN MEANS EASY MAINTENANCE

Simple, conventional circuits minimize the number and types of tubes, and require no special training or techniques for adjustment. All components are accessible for routine inspection and service.

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Product Literature and Booklets

The engineering products department of RCA has worked out a synthesized Link trainer display of the Teleran system of air navigation and traffic control. The Link instrument panel display shows the operator a map of terrain over which he is flying. His own position appears as a moving spot of light on the map, which also shows other aircraft in the neighborhood. With the display it is possible to make a simulated flight in the Link, taking off, flying a predetermined course, and making an instrument approach and landing. RCA has available a new booklet describing the demonstrator.

* * * *

A new miniature vacuum tube called the Chronotron, which Eclipse-Pioneer has developed for electronic control circuits in which a rate factor and time delay are needed, is described in a 4-page catalog insert No. 73-3A available from Eclipse-Pioneer Div., Bendix Aviation Corp., Teterboro, N. J.

Classified Advertising

The rates for advertising in this section are as follows: "Help Wanted," "Positions Wanted," "Aircraft Wanted or For Sale," and all other classifications $1.00 a line, minimum charge $4.00. Estimate bold face heads 30 letters and spaces per line; light body face 40 per line; box numbers add two lines. Terms, cash with order. Forms close 20 days preceding publication date. Rates for display advertisements upon request. Address all correspondence to Classified Advertising Department, AMERICAN AVIATION PUBLICATIONS, 1317 F Street N. W., Washington 4, D. C.

for SALE By AMERICAN AIRLINES, INC.

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- **Douglas DC-3 Airplane Parts, Accessories and Ground Equipment**
- **Wright G-102 (C9GB) Engine Parts, Accessories and Components**
- **P&W R-1830-92 Engine Parts, Accessories and Components**

ALSO

- **Douglas DC-4 Airplane Parts and Accessories**
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These inventories are available for inspection at our warehouses at Astoria, L. I., New York, Tulsa, Oklahoma and Fort Worth, Texas, and offered F.O.B. these points for domestic shipment at very attractive prices.

Prompt attention will be given to all requests for quotations directed to the attention of the Superintendent of Stores at the above address.

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ENGINES FOR SALE. 50 brand new Pratt & Whitney R2800-83A engines. Stored in dry warehouse and inspected and preserved periodically. Suitable for original installation in DC-6, 240 and 202 Airplanes. Price $11,500 each, f.o.b. Alexandria, Virginia. Address Capital Airlines, National Airport, Washington, D. C.

NOTICE TO BIDDERS

NOTICE TO BIDDERS. Sealed bids for the leasing and operating of a public airport known as Linden Airport, formerly known as the Eastern Aircraft Airport at Linden, N. J., located at U. S. Route 1, State Highway Route 25, and Stiles Street in the City of Linden, Union County, New Jersey, will be received by the Governing Body of the City of Linden at the City Hall, Wood Avenue and Blancke Street, Linden, New Jersey, until 9 P. M. Eastern Daylight Saving Time on Tuesday, the 19th day of August, 1947, and then publicly opened and read. Bidders may obtain "Information for Bidders and Specifications" and additional information from City Clerk, City Hall, Linden, New Jersey. Each bidder must deposit with his Bid a certified check made payable to the order of the City of Linden in the amount of $5,000.00, subject to the conditions provided in the "Information for Bidders and Specifications." No bidder may withdraw his bid within forty-five (45) days after the actual date of the opening thereof. The right is reserved to reject any or all bids, to waive any informalities in the bids, and to accept the bid deemed most favorable to the interests of the City of Linden. By order of the Common Council of the City of Linden. Thomas J. Wieser, City Clerk.

NOTICE TO BIDDERS. Sealed proposals for the leasing and operation of the following facilities at the Smith Reynolds Airport, Winston-Salem, N. C., will be received by the Forsyth County Airport Commission at 10 A. M. September 15, 1947, in the Terrace Room in the Smith Reynolds Airport Facilities consist of: 1 (one) hangar, 12,500 square feet; 1 (one) hangar 5220 square feet and all related aviation activities. Field is a Class 6 Airport, located within 3 (three) miles of one of the largest metropolitan areas in North Carolina. Further information can be obtained from G. W. Long, Airport Supervisor at the Smith Reynolds Airport, Post Office Box 3099. The right is reserved to reject any and all proposals, to waive any informalities in the bids and to accept the proposals deemed most favorable to the Commission. Forsyth County Airport Commission, P. O. Box 3099, Winston-Salem, N. C.

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Wings of Yesterday

25 Years Ago

Experiments were conducted at Bolling Field, Wash., D. C., to determine best methods of radio communication between ground stations and planes for the carriage of mail at night. (Aug. 1922)

From the inauguration of the service, July 17, to Aug. 17, 624 passengers were carried by Aeromarine flying boats between Cleveland and Detroit, while 150 more made special flights. With a daily service of two planes each way, 114 crossings of Lake Erie were made in the first month of operation. (1922)

The Danish Air Transport Co., having obtained official guaranty for one-half of a possible deficit, arranged express traffic connections with Central Europe. The company carried certain mail in exchange for the government's promise of assistance. (Aug. 1922)

15 Years Ago

American Airways inaugurated air mail and passenger service between Boston, Providence and New York. (Aug. 1932)

Air transport facilities were made available to many middle western communities by an inter-system traffic agreement between Trans-American Airlines and two surface networks, Greyhound Bus Lines and Eastern Michigan Railways. (Aug. 1932)

United Air Lines commenced operation of the first all-air night passenger service between New York and Chicago. (Aug. 1932)

Letters

Freight Position Applauded

To the Editor:

. . . I wish to congratulate you on one of the clearest expositions of the freight forwarder I have ever read. Everyone in the industry, including the CAB, has been groping for some clear cut thoughts and definitions on the forwarders. I think you have not only given us a good editorial, but rendered an excellent service. This is just one of the many very interesting and helpful services you provide.

R. E. S. DEICHLER,
Vice President-Sales,
American Airlines

To the Editor:

As former international traffic analyst for Air Cargo, Inc., allow me to congratulate you on your excellent editorial entitled "New Era for Cargo."

It is most encouraging that after lapse of a few precious years, the airlines are now definitely embarking on a real program on behalf of air cargo.

While it is important to provide the all-around services through a centralized agency at Air Cargo, Inc., as now planned, the task of familiarizing general business with the economics of time-saving will still have to be mastered if a large volume of cargo is to be stimulated for the airlines.

Although air-freight charges may remain higher than cost of transporting goods by other methods, the benefits from time-saving with quicker turnover can readily warrant them in eyes of shippers.

The spread of public understanding of benefits from time-saving can readily be done through Air Cargo, Inc. If so it will effectively supplement its laudable efforts to obtain for air shipments the place it deserves in the future of national and world-wide transportation.

GEORGE F. BAUER,
New York, N. Y.

In Defense of Forwarders

To the Editor:

I noted with interest your editorial of July 15 regarding air freight forwarders. In my opinion your article had a convincing ring and was an earnest effort to present . . . a thesis on a subject with which you are obviously not too familiar. However, the reader might assume that you were heavily prejudiced in favor of the commercial airline conclusions as to the necessity of an air freight forwarder operation. I find it hard to believe that you want to give this impression. Therefore, I hope that you will find it necessary to publish part or all of this letter in order to present both sides of the issue.

Our argument for the necessity for air freight forwarders goes as follows:

1. **A sound transportation tariff requires a rate differential between small units of freight and large units of freight.** This is particularly true when you are loading a carrying vehicle with many small shipments rather than filling the vehicle with a single shipment. As you say "the airlines do have a cost differential between handling small and large shipments." It is understandable that there is proportionately more work involved in handling 1600 shipments weighing 10 pounds each, than 800 shipments weighing 20 pounds each. . . . I understand that certain volume shippers are formally objecting to the "flat-rate" scale proposed by the scheduled air carriers on the basis that it is an unsound tariff.

2. **The economies resulting from a volume flow between major trade areas should be passed on to the general shipping public.** If a proper general tariff is maintained as outlined above, restrictive non-profit shipping associations will take advantage of the volume rates by consolidating the freight of its members, moving it over the air carrier on a single freight bill. These associations are, in a sense, discriminatory since they do not make their rates available to the general public. Furthermore, these associations are at the moment outside the pale of regulation. The air-freight forwarder would make these economies available to the general public by establishing lower airfreight rates than those of the carriers between volume points. An agency, such as Air Cargo, Inc., would be unable to pass on these savings without breaking down the tariffs established by its principals.

3. **The Airfreight forwarder would greatly benefit the carrier.** You stated in the case of the rail forwarder ". . . The forwarder makes his profit from a savings in costs afforded the carrier." This is also true of the air forwarder. If the carrier is tendered only large unsolicited shipments, the savings in sales costs, billing work, manifesting, advertising and accounting, offset the income he might have received from the more lucrative small package traffic. These costs are assumed by the airfreight forwarder and he runs the business risk of meeting his overhead by strenuously developing airfreight for the air carriers. Since the increased rate for small package traffic is based on the increased cost of handling such traffic, and the forwarder assumes this revenue and the costs as well, then he must perform a more efficient service than the carrier in order to pass a portion of this spread on to the shipper and meet his overhead with the balance. In the meantime, the cost has been removed from the carrier's shoulders and the carrier obtains full revenue (no sales commissions) for the volume of freight tendered to it.

Furthermore, with forwarders, the carriers could specialize in the business of carrying loads back and forth across the country and eliminate the fancy and expensive trimmings which are fixed overhead. They would find that their loads and profits would increase while the load required to show a profit would decrease.

4. **Air Freight Forwarder will offer a service compatible with price.** The fact that rail forwarders often offer a faster service than rail LCL is not so much a compliment to the forwarders as a slap at the railroads. Consolidation does take time. The shipper receives a lower rate by reason of a slightly slower service. A forwarder cannot, for competitive reasons hold freight so long that his rate is out of line with his service. A rail forwarder cannot delay freight so that his service is not worth the premium over that of truck service. An air forwarder cannot hold his freight so that it is not worth the considerable premium over Railway Express. This also works in reverse. If a shipper saves very little by dealing with a forwarder rather than an express company, the delay cannot be appreciable. In the air—a matter of hours—on the surface, a matter of days.

THOMAS L. STEVENS, President
Federal Air Freight Co.,
Los Angeles, Calif.

Questions Freight Tariff

To the Editor:

Wayne Parrish's editorial in the Aug. 1 issue heralds a long-awaited era in air transport . . . an independent, self-operating air freight system, primary achievement so far being the new simple, single-rate tariff, placing the airlines in the freight business without benefit of freight forwarders or the Railway Express Agency.

However, I feel that this is the gravest mistake the airlines have made so far in their air freight venture . . . a simple, one-rate tariff. From the simple viewpoint of psychology a single-rate tariff is an error. True, the airlines today are handling small articles of primarily an express nature. Nevertheless, the airlines are looking forward to heavy plane-load freight and already have massed fleets of all-cargo aircraft operation. A shipper or consignee (who usually pays the freight bill, anyway) of high unit value machine tools will think twice before shipping by air when he finds he is paying the same rate as the shipper of low unit value furniture.

Most shippers will avoid large volume shipments as well and confine their shipments to the base or essential erecting item, sending the remainder by rail or truck. There is no value in shipping in volume . . . the poor shipper pays the same rate for 100 pounds as for 14,000 pounds . . . or in most cases, nearly a full plane-load.

ROBERT G. AVERILL,
Longmeadow 6, Mass.

Obituary

Frank H. Russell

Frank H. Russell, pioneer of the aircraft manufacturing industry and one-time head of the Manufacturers Aircraft Association, died Aug. 4 in Newtown, Bucks County, Pa., at the age of 68. He was widely known in the industry, and retired in 1931 after a career which covered most phases of aircraft manufacturing.

American's new fleet of DC-6's now flying...

All of the American Airline's DC-6 flagships now operating are equipped with the Sperry A-12 Gyropilot and Gyrosyn Compass. These Sperry instruments give American's pilots the double advantage of complete gyro-stabilized control and accurate directional indications under all flight conditions.

...with Sperry A-12 Gyropilot at the controls

This versatile electronic automatic pilot applies gentle but alert control corrections precisely as needed, helping the human pilot to do his job better and with less effort than by manual manipulation of his controls.

...for greater flight smoothness, comfort and enjoyment

The A-12 Gyropilot eliminates over-control, "hunting" and "wallowing" ... brings to passengers the flying comfort, relaxation and enjoyment of a plane held in smooth flight under all conditions of air turbulence.

AND IN THE MARINE FIELD, *Sperry Gyro-Pilots, linked with Sperry Gyro-Compasses, are providing automatic straight-line steering.*

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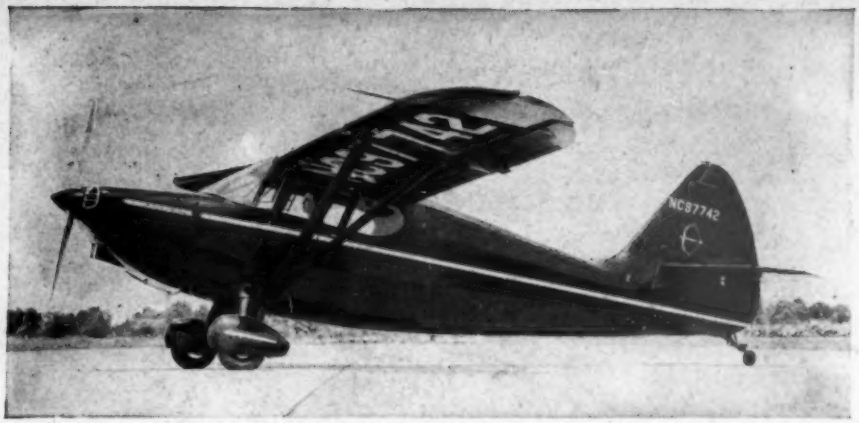

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Vacation time . . . journey time . . . and your Stinson Voyager! What could be better than a trip in your own plane, to—California, Canada, maybe Mexico. Places you've been thinking about all year.

Go ahead! Plan! You're not the only one thinking about this air tour. We too, have been giving it a good deal of thought. And let us tell you something—for real flying pleasure, Phillips 66 Aviation fuels and lubricants are the products you'll want.

Phillips UNleaded 80 octane gasoline gives smooth take-offs, a clean engine, and uniform fuel performance. All our engine oils and lubricants were developed with your trips in mind.

Stop at any of the many airports displaying the orange and black shield. Then take off to a happy vacation . . . with Phillips 66 Aviation Gasoline. The Aviation Department, Phillips Petroleum Company, Bartlesville, Oklahoma.

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